# THE CULTIVATOR:

## A MONTHLY PUBLICATION, DEVOTED TO AGRICULTURE.

I KNOW OF NO PURSUIT IN WHICH MORE REAL AND IMPORTANT SERVICES CAN BE RENDERED TO ANY COUNTRY, THAN BY IMPROVING ITS AGRICULTURE.—*Wash.*

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## THE CULTIVATOR.

### TO IMPROVE THE SOIL AND THE MIND.

### The New Husbandry.

Having shown that manures are indispensable to good husbandry—that they constitute the food of plants—and that they may be greatly increased by good management, we proceed now to the second requisite in the new system of husbandry, viz:

II. DRAINING.

Few improvements of modern date are likely to become more beneficial to the northern section of the union, than systematic draining. In the first place it will reclaim, and render highly productive, large tracts of land, which are now unproductive in any thing useful, by reason of the water which constantly covers or saturates them. In the next place, it will improve lands that are wet, and render them far more manageable and productive, in grain, roots, and the more nutritious grasses, by carrying off the superfluous water. Where there is an excess of moisture in the soil, ploughing can only be imperfectly performed, nor until late in spring,—the benefit of manure is lost, and the cultivated crop is light, and more subject to vernal and autumnal frosts, than it would be if the land was laid dry.

The soil, in regard to vegetable nutrition, may be compared to the animal stomach, which digests,—and the spongeoles or rootlets of the plant to the lacteals of the animal, which absorb and take up, and propel, the digested food to the elaborating organs—the lungs of the one, and the leaves of the other,—where this food undergoes its last preparation, and is fitted to become a part of the organic matter of the animal or vegetable. We all know that when the animal stomach is out of order, from any cause, so that the food taken upon it is not properly digested, the subsequent processes of nutrition are arrested, and if the cause is not removed, the animal sickens, and ultimately dies. So with the soil. If the vegetable matter deposited there, to feed the crop, is not decomposed, or rotted, and resolved into a liquid or gaseous form, so that it can be taken up by the spongeoles, the plant will become sickly and unproductive, and the processes of healthy nutrition be at a stand. Hence the accumulation of vegetable matters in swamps, marshes and other locations habitually saturated with water, and their great fertility when thoroughly drained, and exposed to the influence of all the agents of putrefaction; and hence the necessity of draining the wet grounds on our farms before we can expect to make them profitable by culture. Coarse and aquatic plants, it is true, do grow in wet grounds, and in water; but few of the cultivated crops, however, are found to thrive where the ground is not dry and permeable to the influence of the sun and atmosphere.

It is not enough that the surface of a soil be dry: it must be so to the depth to which the roots of plants penetrate for food, at least fifteen to eighteen inches, to insure a healthy growth of vegetation. It is the extremities of these roots which gather the food, and which are constantly elongating while the plant grows; and if roots extend into a wet stratum, the food which they take up is either too much diluted, or not otherwise adapted to a healthy vegetation. Nor is this all: the water injures or destroys the fibrous parts of the roots, and unfits them for the performance of their functions.

We have published ample directions in the Cultivator, for the various modes of draining; and have pressed upon the notice of our readers the importance of this branch of improvement. Yet we have a few remarks to offer here, on the particular advantages which underdrains possess over open drains, in certain locations.

The object of draining being to carry off the surplus water before it saturates the surface soil, impedes early tillage, and injures the crop, it should be our first care to ascertain the cause of wetness, and where the deposite, or fountain is, which is the source of the evil. Where water rises through the subsoil or the lower strata, in spouts or springs, as well as where, falling upon a flat surface, it collects and reposes upon an impervious subsoil, underdrains are decidedly best, at least to collect the surplus waters into a main open drain. They are not only best, because the most efficient, but they are the most durable, most economical, and waste no land.

*They are the most efficient.* They can be made to reach, by digging and boring, the depot of water, or water stratum, and thus to carry it off before it approaches the surface, or pasture of plants. Open drains do this but seldom, or but imperfectly, because they are not often carried deep enough, and are continually liable to obstructions, which impair their efficacy.

*They are most durable.* An underdrain, laid in the most approved mode, with stone or tile, will last an age, if not a century. Open drains are but temporary in their beneficial effects, without periodical repairs.

*They are the most economical.* A good underdrain generally costs no more than a good open drain, which effects a like purpose, and probably not so much, as the former can be carried down with nearly perpendicular sides, while the latter must be dug with sloping banks, and must embrace a width of surface corresponding with its depth—the deeper the drain, the broader it must be at top. The cost of the stone or tile is in a manner counterbalanced by the difference in excavation. And when completed, the underdrain will require no annual repairs, while the open one will be a constant drain upon the labor of the farm, requiring bridges and frequent scouring and cleaning. If underdrains cost sometimes the most, they are unquestionably cheapest in the end—provided they are well made.

*Underdrains waste no land.* They may be multiplied at every twenty feet, as they sometimes are upon stiff flat clays, without excluding the plough or the scythe, from a foot of the surface. Open drains, on the contrary, if made of suitable dimensions, require a breadth of three or four feet, and the plough is excluded from as much more at their sides.

We draw no comparisons, nor do we need any, between the products of a field of habitually wet soil, or the trouble and expense of managing it, and the same field after it has undergone a thorough drainage and amelioration. Every farmer, we presume, has noticed the vast disparity in both. If there is one to whom it is not familiar, let him make the trial, and he will be astonished at the result, and at his own want of forethought in not having made it before.

III. GOOD TILLAGE.

When thorough draining has been effected, upon lands to be benefitted thereby, there is another operation which is calculated to aid in the efficiency of manures, and in the increase of farm products. This is good tillage—a perfect pulverization of the soil, and the keeping it free from weeds, which retard the growth of the crop, and rob it of its food. Good tillage is important not only as it serves to exterminate weeds, to facilitate the digestion of vegetable food, and to mix and incorporate this food, with earthy elements,—but as it breaks and mellows the soil, and enables the roots of plants to range freely in search of this food. Every farmer must have observed, that where tillage has been but imperfectly performed, as is sometimes seen about stumps and rocks, and near fences, the crop is comparatively feeble and light. This is not owing to the poverty of the soil, because the plough, as it rises to the surface in these places, deposites and accumulates there the best and finest mould of the field. The feebleness of the grain arises from the imperfect tillage which those spots receive. The old practice of carrying the main furrows to the extremity of the field, and of dispensing with head lands, is a bad and slovenly one, and ought to be every where exploded. The cut and cover practice, is still worse, as it leaves one-half, and sometimes two-thirds, of the soil, undisturbed by the plough. We remember well, that when we followed the plough in our boyish days, and knew nothing of the philosophy of ploughing, our aim was, to go over much ground, and show a ploughed surface, regarding the complete breaking up of the soil as of minor importance. There will always be a great many boys at the plough, until the importance of *good* ploughing is better understood. Good ploughing consists in breaking or turning every inch of the soil; and good tillage requires that the harrow and roller should finish, if the plough has failed to effect, a complete pulverization of the soil. A green sward becomes pulverulent as the roots of the grasses decay, and is best without a second furrow, because this turns again to the surface, to the wasting influence of the sun and winds, the vegetable matters buried by the first ploughing, and which, if left buried, would contribute largely to the sustenance of the crop. As the roots of the grasses decay, the soil becomes loose and porous, and is permeable to moisture, air and heat. Hence the advantage of fallow crops over naked fallows, and of depositing seeds upon the top of a clover lay; the sod then imparts fertility to the soil, while it enables it to derive important advantages from the co-operation of external agents.

Good tillage requires, that where practicable, as in the culture of drilled and hoed crops, the surface soil should be *kept* clean and pulverulent, while the crop is growing, for the same reason that the soil is required to be made so before depositing the seed, viz: to facilitate the decomposition of the vegetable food, to stimulate the organs of the plants, and increase the growth and product of the crop. There is no better expedient for preventing the evils of drought upon a soil, than that of keeping the surface mellow and clean. Atmospheric air and dew, both always charged with the nutritive food of plants, settles into such a surface as into a sponge, and imparts to the roots of plants both aliment and stimuli. Dews fall *upon* a hard surface, and are evaporated by the first rays of the morning sun; but they *penetrate* a loose surface, and moisten and fructify it. Hence the high repute of the drill husbandry, which enables the cultivator to keep his crops clean, and the surface of his soil mellow and open.

Good til age has reference to *depth*, as well as quality of tilth. "There are many plants, the roots of which are found at fifteen to twenty, and even thirty feet under ground—sainfoin and lucern, for instance; even red clover well strike down to nearly three feet if the soil be a fertile loam; and some of our commonest vegetables, if it be friable or sandy, push their tap roots to about the same depth. The roots of wheat will penetrate as far as eight inches into the earth; and when sown on the crown of ridges, they have been found at the depth of twelve. We may therefore assume the depth of twelve inches as the utmost vegetative limit of corn land. Provided the soil be open and fertile, the nearer its depth approaches to 12 inches, the greater number of plants may it therefore be supposed capable of furnishing with support."—*Brit. Husb.* vol. ii, p. 49, 50. Soils should be ploughed as deep as the substratum will admit, at least once in a course of crops, if this can be reached with the force of an ordinary team; and when the surface soil is superficial, it should be deepened, as fast as fertility can be imparted, by turning up, at suitable intervals, some portion of the subsoil. The atmosphere imparts to this apparent inert earth, more or less of the elements of fertility. Baron Von Voght, increased vastly the value and products of his farm, by increasing the depth of its mould, (krume,) or vegetable pasture, in this way, in the period of sixteen years, from three to fourteen inches. Land that in the outset would only yield him fourteen bushels of rye to the acre, was by this mode of improvement brought to yield twenty-four bushels of wheat; and the improvement was not confined to a part, but extended to the whole farm, comprising some hundred acres. The reader is referred, for a detail of these improvements, and an account of the Baron's excellent system of husbandry, to No. 1, Vol. 2, of the Cultivator. And it has just been announced to us in a foreign journal, as one of the greatest improvements of the age, in rural affairs, that a plough has been invented, which breaks and pulverizes the subsoil, without turning it to the surface. Its advantages to agriculture are thus described by Le Fever, in Loudon's Magazine:—

"Smith's subsoil plough seems calculated to render the most sterile and unproductive soil fertile and profitable. Mr. Smith's most ingenious invention, by breaking the subsoil without bringing it to the surface, renders it pervious to both air and water. The same chemical changes which take place in a fallow, owing to its

exposure to the action of the winds and rain, are thus brought into operation in the subsoil, whilst the surface soil is in the ordinary course of cropping; and when, after a few years, by a greater depth of ploughing, the subsoil is mixed with the upper soil, it is found to be so completely changed in its nature, as to be capable of producing every kind of corn."

Jethro Tull and his disciples maintained, that the great secret of inducing fertility, consisted in minutely dividing and pulverizing the soil by culture; and John Taylor, the Arator of Virginia, and an excellent practical, as well as scientific farmer, considered the atmosphere as the great store-house of vegetable food, where this food exists in a gaseous form. The good tillage we advocate embraces all the advantages of Tull's and Taylor's theories, without lessening the importance which we attach to barn-yard manure.

The deep ploughing of dry land, or the breaking up and stirring of the subsoil, promotes fertility, by increasing the power of the land to absorb water by cohesive attraction. "The power of soils to absorb water from air," says Davy, "is much connected with fertility. This power depends in a great measure upon the state of division of its parts, the more divided they are, the greater their absorbent power. When this power is great, the plant is supplied with moisture in dry seasons; and the effect of evaporation in the day is counteracted by the absorption of aqueous vapor from the atmosphere, by the interior parts of the soil during the day, and by both the exterior and interior during the night." The soil imbibes caloric earlier in the spring, and retains it later in autumn, in proportion as it is dry and deep, a matter of high consideration in cold climates, where the length of the summer scarcely suffices to mature the crops. The quality and dryness being the same, a soil is fertile and durable nearly in proportion to the depth of the tillage which it receives: six inches giving nearly double the pasture for plants that a three inch stratum does—and a twelve inch tilth greatly exceeding in productiveness, one of only six inches. Von Thäer calculates this difference in proportionate degrees in lands which contain a vegetative stratum of soil of four, six, eight and twelve inches in depth; provided, of course, that it be all of equal quality. If, therefore, each seed were to produce a plant, it would follow that ground which contains eight inches of depth of fertile mould, might be sown with double the quantity of that which consists of only four inches. He however admits, that this principle cannot be carried to that extent, because the action of the atmosphere must ever afford that superiority to the surface, that a cubic foot of mould, if divided into two square feet, will always produce a greater number of plants than if the seed were sown upon one foot superficial; but he assumes the value of the land to be increased in the proportion of eight per cent for every inch of mould beyond the depth of six to ten inches, and to be diminished, in the same proportion, from six to three inches, in soils of a thinner staple.—*Principes Raisonnes d'Agriculture, vol. iii. p.* 138, *s.* 735. These considerations have been hitherto but little regarded in our practice, through they constitute an important feature in the new system of husbandry.

Good tillage demands also, the extirpation of weeds. Every plant which grows upon a soil tends to impair its fertility, and weeds generally more than cultivated crops, because theyare generally the most hardy, and the greatest consumers of vegetable food. They are particularly prejudicial to crops in a dry season, as they exhaust the soil of moisture in proportion to their superficies—or the surface of their stems and leaves, some species transpiring their weight of moisture every twenty-four hours. The drill culture and deep ploughing both lessen the evil of weeds; the first tends to destroy them, and the latter to bury their seeds so deep, as to prevent the plants getting ahead of, and choking, the young crop. Clean tillage has been too much neglected in our practice. Many crops are diminished a fourth, a third, and a half, by pestiferous weeds which are permitted to seed and propagate upon the land.

Good tillage requires good implements, and these to be kept in order, that the farm work may be economically done, and well done, and done at the proper time. The disparity between old and new implements of culture is great, not only in the time employed, but in the manner in which they do the work, and in the power which is required to perform it. The old plough required a four cattle team, and two hands, to manage it, and the work, ordinarily, was but half executed. The improved plough is generally propelled by two cattle, requires but one man to manage it, and, when properly governed, performs thorough work. Harrows and other implements have undergone a like improvement. Besides, new implements, which greatly economise the expense of tillage, are coming into use, as the roller, cultivator, drill barrow, &c. so that a farm may now be worked, with half the expense of labor that it was wont to be worked forty years ago, and may be better worked withal. Mind, likewise, where it is put in requisition, and enlightened by science, is doing ten times more in aid of agricultural labor than it formerly did.

If we revert to old, and in most cases to present practices, we shall perceive, that thorough tillage has not been sufficiently attended to. Our implements have been defective, and the manner of using them often imperfect. Good ploughing is all-important to good farming, and still there is no labor upon the farm that has been more imperfectly performed, than this generally has been. Light soils seldom require but a single ploughing for the seed, if well executed; but if badly executed two ploughings are too little. Our implements are, however, daily improving, the importance of good tillage is becoming more and more apparent, and our practical knowledge is increasing.

### The Farmer's Garden.

Every farmer should have a garden, for health, for pleasure, and for profit. For *health*, as nothing, in the form of diet, contributes more to this blessing, than a variety of choice fruits and vegetables for his table; while the exercise and recreation which the cares and beauties of the garden excite, are highly promotive of health. For *pleasure*—and what can afford a more heart-felt pleasure to the eye, unalloyed with pain, than the various and ever changing beauties of a well-kept garden? and what a more rich and innocent enjoyment to the palate, than a successionf of fruits and vegetables, the product of our own culture and of our own soil. For *profit*—believing, as we verily do, that the labor judiciously bestowed in garden culture is amply repaid, in the subsistence it furnishes for the family. "It is incredible to those who have not had occasion to observe the fact," says Cobbett, "how large a part of the sustenance of a country laborer's family, in England, comes out of his little garden." And yet the culture of the English laborer's garden costs him virtually nothing. His occasional hours of leisure, with the aid afforded by the otherwise unproductive inmates of his family, suffices to complete the work. The rural scenery of England derives much of its interest from the beauty of the farmer's and cottager's gardens which every where abound; and many of the successful competitors for premiums, on fruits and flowers, at the horticultural shows which are there held in almost every town, are weavers and manufacturers, who cultivate their little patches of ground in the hours of exemption from professional labor. Indeed so prevalent is the taste for garden improvement and embellishment, that a man is judged of by the character of his garden. "Poverty," says Cobbett, may "apologise for a dirty dress, or an unshaven face; men may be negligent of their persons; but the sentence of the whole nation is, that he who is a sloven in his garden, is a sloven indeed. The inside of a laborer's house, his habits, his qualities as a workman, and almost his morality, may be judged of from the appearance of his garden. If that be neglected, he is, nine times out of ten, a sluggard, a drunkard, or both." The great strife every where is to get wealth—and for what? To increase the enjoyments of life. A great many of the most substantial of these enjoyments are within the reach of most men—they lie at our door—IN THE GARDEN—but we too often reject or overlook them, because they are not "dear-bought" and "far fetched."

Under our impression of the great advantages which are to be derived from the garden, to the body and mind—as a source of health, of pleasure and of profit, we intend, now that our sheet is enlarged, to devote more room for its improvement. We will shortly give a plan of a garden; and in the mean time, the scientific principles of gardening, of Prof. Rennie, which we are publishing, will be found no less applicable to the farm than to the garden. Postponing to a future occasion, our remarks upon the soil, and laying out of a garden, we proceed to give some instruction for the management of gardens already located, more particularly adapted to the present season, barely remarking, that every man who would have a good garden, must, like the late Rev. Dr. Dwight, be at least his own head-gardener—he must make himself so far acquainted with the principles and manipulations of the art, with the qualities of his soil, and the wants of his table, as to be able to superintend and direct its principal operations. He *may* obtain a good substitute, but he may be assured there are more than two blanks to a prize. And the task of qualifying one's self for this duty, is conducive alike to bodily health and mental gratification. It may become a passion, increasing with experience and with age; but it is a passion which bodes no ill to any one, but, which, on the contrary, is fraught with the best feelings of our nature.

The *preparatory business* in the garden, in the spring, is to rake together the haulm of last year's crop, and to burn it, as well for cleaning the surface, as to destroy the seeds of weeds with which the litter more or less abounds; to put the fences in good order; to take the manure to those parts where it is likely to be wanted; to procure and sharpen, if leisure permits, poles for beans, and sticks and brush for peas; to prune the fruit trees, if they must be pruned in the spring; to put the garden implements in order, and to procure a supply of good seeds. If a hot-bed is to be employed, and we strongly recommend one, it should be prepared, if not already done, in the manner recommended in pages 6, both in our second and third volumes. In these may be sown early and head lettuces, peppergrass, radishes, peppers, tomatos, early cabbages, cellery, and seeds of many annual flowers. If cucumbers are designed to be raised under glass, they should have a separate frame, or be but little encumbered with other plants.

The seeds which should be *first* sown in the open ground, and the warmest border or part of the garden should be appropriated to them, are early peas, potatoes, turnip beet, spinach, sallads, radishes, early cabbage, cellery, &c. The *second* course of sowing may embrace onions, beets, carrots, early corn and beans, sweet herbs and flower seeds. The third course will consist of the tenderer kinds, as Lima and other beans, sweet corn, cucumbers, melons, squashes, pumpkins, &c. The plants of the garden possess different degrees of hardiness, and require different temperatures to bring them forward. Some will germinate and grow at a temperature of 45° to 55°; and will not suffer from slight frost; while others will not grow unless the temperature is higher, and are liable to be injured by the slightest frost, or by cold damp weather. When corn, put in the ground very early, shoots to the surface, it is deemed early enough to plant melons, cucumbers and other vines for a main crop. All roots, to be planted for seed, as turnip, beet, carrot, parsnip, onion, &c., should be put out as early as the condition of the ground will admit, where the soil has been well prepared. They should be put at sufficient distance from each other to permit their seed stocks to spread, and to enjoy the full benefit of light and air. No two kinds of the same family of plants should be put out for seed near each other, not even the turnip and cabbage, as the seed will thereby become adulterated.

It is important in planting, for most crops, that the ground should be well dug, or ploughed, to the depth of eight to ten inches, to which depth the roots of most plants run, and for the tap rooted plants, as beets, carrots and parsnips, it were better to have the tilth twelve to fourteen inches. The ground should be fresh turned or stirred when the seeds are put in, and either trod, on the lines where the seeds are to be deposited, before planting, or pressed upon them after they are covered with earth. Seeds should be planted no deeper than is required to keep them moist.—See our article upon the germination of seeds, in another column.

This is the season for transplanting. How often do we hear people regret, on seeing their neighbor's gardens abound with choice fruit, that they too had not planted in times past. The season for transplanting fruit trees is unavoidably limited to the season of defoliation, when the growth is dormant; and the excuse of men generally is, that they either had not time, or forgot, to put out trees when alone the work could be done. This is very much like the man who suffered his family to be drenched by every rain, because he could not patch his roof when it stormed, and because there was no need of doing it when the weather was fair. What short-sighted mortals, to undergo a life of privation, of many of the richest gifts of Providence, rather than incur the trifling outlay of expense and labor—of a few cents and a few hours—to secure those blessings for themselves and families? Mercenary considerations alone—the ruling passion—should prompt to the planting of fruit trees. One of our neighbors has been in the habit, for years, of receiving from $500 to $1,000, for the fruits of his garden, after supplying himself and a large circle of friends. Another once pointed to a fine black heart cherry tree in his garden, and remarked, "the fruit of that tree has brought me fifty dollars." The tree might have cost him fifty cents, and the planting fifty minutes of time. This was ten years ago, and the tree still continues to render its annual tribute. We know a Siberian crab, the fruit from which brings the proprietor from eight to twelve dollars every other or bearing year; and of a farmer's garden, from which the currants, besides the liberal use of this fruit in his family, afford an annual income of some twenty dollars. The planting of the cuttings for these did not cost three hours' labor.

But in our zeal to commend the practice of planting, we must not forget to give some hints as to the method of doing it. A tree is like a plant of corn, or of any other farm crop: it will prosper and repay for labor, according to the soil in which it is placed, and the attention bestowed upon its culture. The soil must be good, to afford the necessary food for its sustenance and growth; it must be loose, that the roots may penetrate readily in search of food; it should be free from habitual wetness, as an excess of water will injure, if not destroy it. Like farm crops, too, it de-

pends, for its development, and the maturation of its fruits, upon the unobstructed agency of light and air. Hence it should not be planted below its natural depth in the soil, nor shaded by other trees, nor encumbered by shrubs, weeds or tall grass. Water is the medium by which food is transmitted from the soil to the plant, and is required, therefore, to be always present in the soil to ensure the growth of plants. In transplanting, make your holes as deep and broad, not as the roots require when transplanted, but as they are likely to extend the first season after being transplanted, and fill this hole, as you put in the tree, with rich surface mould, or at all events the lower stratum, which the roots are destined to penetrate in search of food; tread the earth firmly around the roots, when they are covered, to bring it in complete contact with them, and to prevent the evaporation of moisture, which latter evil will be further prevented by spreading some coarse litter upon the surface about the stock of the tree. Two or three potatoes may be thrown in about the roots, before they are covered; and a bucket of water, thrown in when the hole is partially filled, will tend to bring the earth in contact with the roots, and supply needed moisture. The transplanting of evergreens should be delayed till the new growth has commenced, in this the latitude the last of May.

### Samuel Preston on the Apple.

We find in the second volume of the Memoirs of the Philadelphia Agricultural Society, an interesting letter from this old acquaintance, on the culture of the apple tree. Mr. Preston was an early settler at Stockport, in the county of Wayne, Pa.; he planted much orcharding, and personally superintended its management. From this letter we abstract the following hints:

A loose gravelly soil Mr. P. believes is best adapted for an apple orchard, a high and airy situation, and a north aspect, as most secure from the late frosts in the spring. He recommends that horse dung and litter be spread around the tree, to keep the ground loose, and free from sod, and, he might have added, to prevent evaporation of moisture, in a dry time. The trees whose fruit was affected with the bitter rot, Mr. Preston caused to be stripped of their bark from the roots to the limbs, at mid-summer, a practice which we have seen successfully performed to renovate trees that had become cankered and mossy. This operation prevented the bitter rot upon the fruit, though it injured the vigor of the trees. We think a better, and perhaps the *best* mode, of giving health and fruitfulness to apple trees, on dry bottom lands, is, to take off the ross, and moss, with a hoe, or other instrument, and then to wash the body with a strong ley, late in May, or early in June. This destroys insects, and imparts health and vigor. His mode of destroying the caterpillar, was to go early in the morning and twist their nests out of the tree with a stick or pole. The Pickering brush is better. He recommends the planting of natural trees, and that they be grafted with choice fruit when they have attained a good size—and commends the seek-no-further—now considered but a second rate apple. He sowed plaster *under* a part of his trees—a frost followed;—the blossoms were all destroyed, *save upon the trees under which the plaster was sown.* He thinks the plaster attracted the moisture, and prevented frost. This we doubt.

From Mr. Preston's experiments in grafting, we abstract the following: He inserted grafts which came from England and France, which generally grew. He received plum grafts from Esopus, in midwinter, which had come from Holland. He laid them in his cellar till the proper time for inserting them, and they grew well. He made cuttings the 15th September, carried them two days' journey in his pocket, till they were much shrivelled, preserved them till grafting time *under a sod*, then grafted them, and they all lived. He cut grafts in October, kept and grafted them in the same way, and they all failed to grow. Grafts were cut and sent to him in June, when the laeves were nearly of full size—they grew and did well. He took grafts from Albany in March, preserved them carefully, inserted them properly, and yet only two out of many lived.

*Rotation of crops.*—There need not be a stronger argument adduced, in favor of the system of alternating crops, than a condition which is generally inserted in the Scotch leases—*prohibiting the tenant from taking two white crops*, i. e. of small grains, *in succession*, from the same field—because such repetition tended to impair the intrinsic value of the land.

*Long Manure.*—"Were the practice general, [of using dung in its unfermented state] it would add above twenty millions sterling to the produce of the kingdom." So said Arthur Young. This should be received here with the qualification, that it should be always applied to Indian corn, potatoes, and other hoed and autumn-ripening crops. Unfermented manure, when applied in any quantity, *is* prejudicial to the small grains generally, and to all crops which ripen their seeds at mid-summer; but *it is not* prejudicial to the crops we have named, or others, which ripen their seeds in autumn. The farmers of Schcharie, Otsego, Oneida, Madison, &c. who are in the habit of *summer yarding* their dung, under an impression that it improves, like wine and cheese, by age, need not be afraid of hurting their corn and potatoes, by feeding these crops with long manure, and to them the remark of Arthur Young, applied under our limitation, may be turned to vast profit.

### On the use of Gypsum.

There is not any longer doubt, in our mind, of the advantage of applying gypsum to all our meadow lands, in the spring, which are beyond the influence of marine atmosphere, and which are habitually dry. There are instances recorded, to be sure, of its not producing perceptible benefit the first year, and some instances where it did not seem to operate even the second year, and yet it ultimately developed its fertilizing properties.

We do not design now to discuss the question, *how* gypsum does operate—but to inquire and state, from the facts within our reach, to what crops its application is particularly beneficial—on what soils its effects appear to be greatest—how much should be applied to the acre, and at what season it is best applied. We are satisfied, that if the value of gypsum was better known, it would be much more extensively used than it is; and that the more it is used, the greater will be our agricultural surplus.

Gypsum, according to Chaptal, consists of

| | | | |
|---|---|---|---|
| Pure calcareous earth, or lime, ..... | 30 parts, | or | 33 |
| Sulphuric acid, ..... | 32 " | | 43 |
| Chrystalized water, ..... | 38 " | | 24 |
| | 100 | | 100 |

It requires from 450 to 500 times its weight of water to dissolve it. When pure, it does not effervesce with acids; it is insipid in taste, and free from smell. A simple mode of trying its quality, consists in putting a quantity of it pulverized into a dry pot over the fire, and when heated it gives out a sulphurious smell. If the ebullition, or bubbling, which then takes place, is considerable, the plaster is good; but if it is not, it is considered indifferent; and if it remains motionless, like sand, it is not thought to be worth any thing. Its colour is white, gray or blue. Its effects, in benefitting agriculture have been greatest in Germany and in the United States. Its benefits in Great Britain and France have been less certain.

*The soils upon which gypsum operates most beneficially*, are the light, dry, sandy and gravelly. Upon soils containing little or no vegetable matter, its effect is trifling; but if these lands are dressed with dung, the gypsum then produces a great effect; and the dung being present, the poorer the land, the greater its benefits. It seldom produces any sensible effects upon wet grounds, and frequently none upon stiff clays.*

*The crops which are most benefitted by gypsum*, are the clovers, lucern, Indian corn, peas. There are some few cases noticed of its being found beneficial to wheat, and other small grains, but it is the general received opinion that it does not operate directly on these. But gypsum may be made indirectly beneficial to all crops which are grown upon a clover lay, by causing a greater growth of clover, which becomes food for the crop which follows, and which is abundant in proportion to the rankness of the previous clover. Its effects upon turnips is doubtful; and some will not allow that it is beneficial to potatoes. Davy lays it down as a fact, that it is most beneficial to those plants which always afford it on analysis; and the small grains are not found to contain it at all. Many instances are given where its application has doubled and tripled the clover crop.

*The quantity which should be applied to the acre* is a point quite unsettled; and it should probably be varied according to soil and circumstances. John Taylor, of Virginia, and Judge Peters, of Pennsylvania, concurred in opinion, that on lands where it was applied annually, one bushel an acre was an ample dressing. In Europe it is recommended to dress with or five or six bushels an acre. We have generally sown but a bushel; but last spring, by way of experiment, we doubled the dressing on a portion of a meadow, and found the grass there much the heaviest. It is advisable to try it in different quantities, and to note the result of each, as a guide to future practice.

*The time of applying gypsum* is generally in the spring, sometimes as late as May or June. The writer of British Husbandry recommends, with much plausibility, that the gypsum be applied to clovers semi-annually, viz. soon after the crop is mown, in summer, and in the spring, just after the plants have begun to shoot. We will be thankful for memoranda of any experiments that may have been made in this practice in our country; and also, *whether it produces a better effect when laid on in dry, than in wet weather?* The work from which we have just quoted, dwells with emphasis on the importance of having the gypsum attach to and remain upon the leaves of the young plants—and repeats the charge to sow it when the leaves are wet with dew, or with a recent light rain,—and never just preceding or during a rain. Prof. Low says, that mineral substances, as powdered lime and gypsum, are absorbed through the pores of leaves, when scattered upon them. A watery temperature, it is alleged, at least arrests its effects, and seems to suppress them altogether if the gypsum has been calcined, a process which it is sometimes subjected to, to facilitate its reduction to powder. Burning, however, merely expels the chrystalized water, without otherwise altering the gypsum, the strongest heat not being sufficient to expel the sulphuric acid. When applied to tillage crops, it should be either sown broadcast in spring or scattered upon the hills or drills of the growing crop. Upon the principle quoted above, the latter would seem to be the better practice in regard to hoed crops; though our mode of applying it to corn has been to sow it broadcast before the ground is harrowed for seeding. When applied at the rate of five or six bushels to the acre, the effects of a dressing have sometimes continued some four or five years. The most common practice is to sow it annually, upon the crops and grounds likely to be benefitted by it, and to sow it in quantities from one bushel to two bushels on the acre.

To determine the capacity of gypsum for absording moisture, an ounce and a half, in fine powder, was exposed to the air during three foggy nights, and afterwards carefully weighed, when it was found to have gained not quite half a grain in weight. This fact overthrows the theory, that plaster is beneficial on account of its capacity and tendency to imbibe moisture from the atmosphere.

The benefits of gypsum are so palpable in our country, upon clover and some other crops, and indirectly upon nearly all, that we cannot but hope these remarks will serve to extend its use upon our farms, and to induce many to try it, who are experimentally ignorant of its fertilizing powers.

* See communication of Mr. Bayard.

### Economy of Manures.

Parkhurst, an eminent British farmer and agricultural writer, who resided some years near Baltimore, in speaking of our economy in manures, says, that

"The farm yard manure in that country (the United States) is of little value; for it is ill-managed, the straw weak, and the generality of the horned cattle so poor, that their dung is light and worthless."

Now if this charge be true, as there is too much reason to believe it is, let us not scold at the exposure of our fault, but set to work in earnest to remove the reproach, by making our straw stronger, our cattle in better condition, and our manure, consequently, more abundant and valuable.

*An advantage of a calcareous soil.*—Calcareous soils, and soils dressed with lime, are stated, in British Husbandry, to possess the advantage of guarding the sheep which graze upon them from the rot, and also from the foot-rot.

### The new lands of Kentucky wearing-out.

"Injudicious cultivation for a series of years," says the Franklin (Ky.) Farmer, "has robbed much of the soil of Kentucky of its freshness and fertility; and her agricultural sons must now *either content themselves with more sparing crops than repaid the labors of their fathers, or seek for richer and more fruitful fields in the far distant west or south.*" Kentucky became a state, we believe, in 1791. If fifty years "injudicious cultivation," has sufficed to impoverish the so late fertile soil of that state, it affords but another evidence that our system of husbandry is wretched bad, and shows the necessity of a prompt and thorough change. The Flemish soil is generally light and moist, and much of it was absolutely incapable of growing farm crops in its natural state. Yet the skill and industry of the Flemings have rendered it the most productive agricultural district in Europe; and its fertility is still on the increase. Houston, a distinguished British agricultural writer, has shown, that the Flemings get twice as much produce from their lands annually, partly by double cropping, as the English get from a like quantity. That country has been improving in its agriculture for eight hundred years. "In the Pays de Was in Flanders," says Sinclair, "the soil was originally a barren white sand, which by a slow but sure process has at last been converted into a most fertile loam." The county of Norfolk, in England, but a few years ago, was perhaps the least productive district in England; but by judicious management it has now acquired a fame in husbandry, which, in the words of the author just quoted, far surpasses that of other districts far more fertile. "Necessity is the mother," not only of "invention," but of industry; and hence, in poor districts, where nature has done least, we find men doing most; and hence rich lands

are suffered to deteriorate, while art and industry are augmenting the fertility of poor ones.

Cicero, in eulogizing Socrates, passes a just encomium upon that philosopher, when he says—"He conceived the thought of bringing down philosophy from heaven, to place it in cities, and introduce it into private houses; humanizing it, to use that expression, and rendering it more familiar, more useful in common life, more in the reach of man's capacity, and applying it solely to what might make them more rational, just and virtuous." Now we want a Socrates to do all this for our farming community—to bring down the philosophy of science to the useful purposes of life—to place it in our dwellings—to apply it upon our farms; to ruralize it, render it more familiar, more useful, more in the reach of our capacities, and to make it the companion and guide of agricultural labor. This would teach us *when*, and *how*, our soils become exhausted, by "injudicious management," and instruct us in the means of *preventing* the loss of "their freshness and fertility," without diminishing their products or income. It would teach us, also, how to render lands productive which are not so naturally, and to simplify and economize labor in all the departments of our business. But alas! we have no Socrates to render us these kind offices—no schools in which the young farmer can acquire these useful aids to his labor—no public guardians that take cognizance of these highly interesting concerns. Our only alternative seems to be, that which necessity often calls forth on emergencies—we must each become a "*Rural Socrates*," and like the Swiss peasant, upon whom this title was justly bestowed, and whose memoirs we intend shortly to notice, become self-teachers, in the philosophy which instructs, dignifies and rewards rural labor. The means are accessible, and success, to the young at least, will be the result of perseverance.

We subjoin to our remarks a further extract from the article quoted from as our text, with remarking, that we very much fear that his object, scientific knowledge to the farmer, cannot be reached through the means he proposes—geological surveys. This may do something, but no great. Science rows with *one* oar—practice with *another*—and the boat will only go ahead, by the propelling influence of *both* oars, operated upon simultaneously. Now geologists, very properly make the *science* of geology their study, and, were they disposed, they seldom have the practical knowledge necessary to render it of great service to the agriculturist. We must combine the practice with the theory if we would gain useful instruction. And the only way we can conceive of doing this, is to have schools of theory and practice combined—that when boys find themselves at fault in practice, they may discover the cause and apply the remedy from the theory; and that where the theory is obscure or doubtful, they may solve their doubts, and establish their principles, by resorting to practice. If a new implement, or a new principle, is recommended for our adoption, prudence suggests that we try before we adopt it. If an operation in husbandry fails to realize our expectations, we naturally wish to know the cause of failure, and the means of averting it in future. This we generally alone learn from the philosophy of science, which seems to have been dispensed to us for the wisest purposes—to incite to study, to reflection, and to perseverance. But in our enthusiasm on subjects of this kind, we had like to have forgotten our promise, which was to give another extract from the Franklin Farmer. It follows:

"But in his first efforts to improve, the practical farmer is met by difficulties which he cannot surmount alone. He has been bred in the school only of *practical* agriculture, and though he has learned, and practised with success, many of her best lessons, he is now at fault,—and is seen to sink back in apparent despair, and exclaim, what can agriculture do without the light and help of science? He has seen a sickly and dwarfish plant growing where in years gone by it was vigorous, thrifty and prolific, and he does not fully understand the cause. He has seen his fields waving with a luxuriant and promising crop, and just as his hopes were about to be crowned, he has put the sickle to the harvest, and gathered little but disappointment and vexation. He asks himself the reason why,—in vain, for practical agriculture has not taught him that. With unwearying perseverance he tries again the fortune of another season, in hopes that by different cultivation, or more extensive manuring, or a change of crops, to meet with more success. But he is unacquainted with the character and condition of his soil, with the qualities and properties of the different manures, and with the adaptation of particular crops to particular soils, and again his well meant efforts are but half successful. He is constrained to acknowledge that without the light of science he is but groping in the dark, along a path which may lead to fruitfulness to-day, and to briars on the morrow."

### Staggers in Swine.

Our attention has been drawn to this subject by the loss of several pigs in our neighborhood, and one of our own, by a disease denominated *the staggers*. We find in the second volume of the Memoirs of the Philadelphia Society for Promoting Agriculture, a communication from J. P. De Gruchy, of much interest. Mr. G. kept from 100 to 250 hogs, and lost annually several—six, eight and a dozen being taken in a few hours. They were generally attacked in the month of September. The hog would all at once turn round very rapidly, and if assistance was not at hand, would in less than half an hour die. Bleeding and brimstone were applied with but little success. At length one of his workmen put into his hands an old pamphlet printed in the year 1707, in which he found the following prescription for what he considered the staggers: "You will see a bare knob in the roof of the mouth, cut it and let it bleed, take the powder of loam and salt, rub it with it, and then give him a little urine, and he will mend." Mr. De Gruchy employed the remedy for several years, with almost unvarying success; but although his hogs generally recovered, they never throve so well afterwards. The disorder is generally confined to pigs and hogs of middling size.

Mr. De Gruchy mentions another disease which attacked his best hogs (in pen) in August, and which carried off thirteen in a few days. He denominates it the *sore throat*. The hog would often be dead in ten minutes after he was attacked. He bled the fourteenth that was attacked, and had him carried and laid in a clover field, and he recovered. The remainder of the hogs were then turned into the clover field, and the disease disappeared. This was done annually afterwards, and the hogs had neither staggers nor sore throat. It is now a well established opinion, that hogs should have access to pasture, in summer, or at least to the earth, to preserve their health.

### On Climate, and the Means which may be Employed to Modify it.

There are considerations in regard to climate, which should obtrude upon a man who is about to fix his residence for life; and there are artificial means by which it may be partially modified by him who is already located in a bad one. By climate, we do not mean portions of country which are bounded by parallels of latitude; but we mean a district, a tract or a farm, differing in temperature, from local causes, from other districts adjoining. The local cause of this difference may be elevation, contiguity to marshes or waters, aspect, capacity of the soil for imbibing or retaining heat, &c. All of these circumstances have a bearing upon the products of agriculture, and most of them upon the health and comfort of the population.

A district is rendered comparatively cold, by being mostly covered with wood, by the contiguity of marshes, by being elevated above the surrounding districts, and by open exposure to bleak winds. The two first render the air moist, and cause a greater range between the extremities of heat and cold; the rays of the sun are partially excluded from the ground; evaporation is prevented; and the miasma which is often generated is prejudicial to the health of man and beast.

Altitude has a manifest influence upon farm crops. One hundred and eighty feet elevation produces a difference in temperature equal to a degree of 69 miles of latitude. In latitude 54 and 55, in Scotland, Sinclair tells us, 600 feet above the level of the sea, is the greatest height at which wheat will grow, with any chance of repaying the husbandman for his labor.

The quality of the soil and subsoil have an influence upon the temperature and products of a farm. If these are hard and retentive, and particularly if flat, the surplus rain-water does not pass off; solar heat is prevented from penetrating; the soil is cold and sour, and the finer crops cannot prosper. But if the soil consists of sand, gravel, or friable sand loam, and the surface has much of a slope, the excess of water passes off, the heat penetrates freely, and vegetation is healthy and comparatively vigorous, even though the subsoil is somewhat tenacious. A moderately undulating, or rolling surface is, therefore, better for farm purposes, particularly for arable husbandry, than a flat surface, or than a precipitous one, where the finer particles of the soil are liable to be washed into the valleys by heavy rains.

Aspect, in hilly or mountainous districts, is a matter of consideration with the farmer. The soil on the northern slope of a hill is generally richer than on a southern slope, from the circumstance that it is less liable to be wasted by alternations of freezing and thawing, and the effects of rains: But that on the southern slope, being more exposed to the influence of the solar rays, is warmer, and more congenial to grain, and other tender crops; while the north is best adapted to pasture and meadow.

The artificial means of ameliorating a severe climate, consist in diminishing the wood, and exposing more of the surface to the sun's rays; in draining the marshes and wet grounds; in planting the crowns of the hills, and the exposed quarters of the farm, with timber or other trees, where these points have been imprudently bared of their wood; by making small inclosures, divided by stone walls, hedges or belts of timber; by cultivation, and by ridging, and by blending light and friable soils with those which are heavy and stiff. By employing such of these means as are best adapted to the location, much may be done to ameliorate climate, and to render it salubrious. When the surface of the ground is broken, water subsides into the soil, instead of either resting on it, or being thrown off in torrents, often a source of much mischief; and if the surface is formed into ridges and furrows, water is drained off, and the soil is enabled to imbibe the salutary rays of the sun, and the genial influence of dew and air, and may be worked earlier in the spring. We consider it a great defect in northern husbandry, that on flat surfaces, and tenacious soils or subsoils, the lands are not more generally thrown into narrow ridges and furrows, that the winter and heavy rains may pass off as they fall. The above remarks, so far as regards the effects of draining and culture upon climate, we have seen verified in our own practice. The small spot which we improve, when it came under our care, contained much low marshy ground, and abounded in springs, and in wet seasons with waters concentrated in pools upon the surface. The tendency of all this was to render the air cold and humid, and unhealthy, and the crops liable to be injured by late and early frosts, from which the neighboring district was exempt. A thorough system of draining and good cultivation has effectually remedied these evils, and enabled us to work our lands earlier, and to bring our crops to earlier maturity—while the healthiness of the neighborhood has been correspondingly improved. We have done something towards sheltering our grounds, by preserving, where we could, a growth of wood on the exposed quarter, by planting it at other points, and by the culture of live fences.

As marshes and shallow waters are prejudicial to the health and climate of a neighborhood, large bodies of water, like those of the great lakes, which do not freeze over in winter, have a contrary tendency, and particularly to ameliorate the severity of winter, by the quantity of caloric which they give off at that season. Thus the mean temperature of the winter months is several degrees lower at Albany and Buffalo, than it is at Rochester and Oswego, or any where along the southern borders of lakes Ontario and Erie.

In our northern latitudes, every artificial means that is available should be employed to ameliorate the climate. We have many crops that require a combination of favorable circumstances to bring them to high maturity, and in a vast many instances their product is greatly diminished by early and late frosts, which in many cases might be averted, partially if not wholly, by a timely attention to the suggestions which we have now made. Indian corn, for instance, in late years, in order to ensure its maturity, requires to be planted on a warm dry soil, in which sand greatly preponderates, which imbibes heat readily, can be worked and planted early, and that the auxiliary aid of unfermented manures be employed to increase the warmth.

### Olden Times—1795.

CANKER-WORM.

Referring again to the first volume of Memoirs of the Society of Agriculture, &c. the next paper that we shall notice, gives us the character and habits of the canker-worm, and suggestions for preventing its ravages upon our apple trees, by Dr. S. L. Mitchill.

The Doctor tells us, that Forskall has enumerated twenty species of insects which prey upon the apple tree, seventeen of which are *phalænas*, (millers,) of which the canker-worn is one, and more destructive than the rest. This insect in its miller state, conceals itself in holes and under the shaggy bark of the tree. The male has wings, and flies, but the female appears to have no wings, and ascends the tree by creeping up the body. The doctor had noticed them as early as the 25th March, on Long-Island, which was the period of their copulation. Soon after the female, guided by instinct, crawls towards the extremities of the branches, and deposites her eggs where there is likely to be an abundance of foliage to nourish her progeny, and dies. The same degree of heat that causes the leaf to expand, vivifies and hatches the eggs. The worm attacks the tender foliage, the elaborating organs, and thus deprives the blossoms of their proper nourishment; and if the blossoms do expand, they are either destroyed, or become abortive, for the want of elaborated food, which the leaves can only furnish. The tree becomes unhealthy from the like cause, and is cankered and covered with moss. Such is a brief notice of the habits of the canker-worm.

As preventives of the injury they cause, the doctor suggests the scraping off all the loose fragments of

bark, an excellent practice from other considerations, and which may be readily done with a hoe, taking care not to wound the fresh young bark; also, tarring the bodies of the trees, or other impediments to prevent the ascent of the females. For the latter purpose, a hair rope has been recommended, wound once or twice around the bole of the tree. By making the bole clean and smooth, the insect is deprived of its winter shelter, and is exposed to destruction, in its ascent, from birds, which soon begin to make their appearance.

The canker-worm does great injury to orchards, particularly at the east. The late T. Pickering turned his attention to the means of prevention, and made a brush, similar to a bottle brush, though larger, and of a conical shape, which being attached to the end of a pole, is effectually employed in destroying the worm after it has formed its web upon the tree. This brush, denominated the Pickering brush, and sold by our seedsmen, we have successfully used for many years. It is our practice, when the leaf buds of the apple tree begin to burst, to send a man or boy into the orchard, with this brush, properly rigged, while the dew is on, or the weather damp, at which times the young worms are concentrated at a point which may often be covered with the thumb, and hundreds of the nests, with their inhabitants, may be destroyed in two or three hours. When within reach, they may be crushed by the hand, and when farther removed by the stiff hairs of the brush, which, by a turn or two, collects and brings down the web. At this period almost every nest may be descried; and if any should escape notice, they may be seen on a second visit, which may be made a week afterwards, when the worms and their nests become more conspicuous. A day has served to go through an orchard of three or four hundred trees, planted from ten to fifteen years, and to destroy these pests in their germ.

ON PRESERVING AND PROPAGATING TREES.

This is a report from a committee appointed to examine this subject. It relates principally to forest timber, a subject which is daily acquiring increased importance with us. The principal points suggested in this report are the following:

1. That woodlands should be inclosed, to guard the young growth from cattle and sheep.

2. If the wood is old and decaying, it is most profitable to cut clean, and let the land lie for a new growth, which will thus have an equal advantage of sun and air. If inclosed, nature will do all the rest, and much better than art or labor.

3. This mode of propagating wood and timber is profitable upon poor land. One of the committee purchased ten acres of poor land, which had just been cleared of its wood, at $2.50 per acre; and in twenty years the growth of this wood had enhanced its value to $12 an acre.

4. When sprouts have been nipped or bitten by cattle, cut them close to the ground: new sprouts will immediately shoot up, straight and vigorous.

5. Woods ought not to be thinned too much, lest it cause the decay of trees, and by encouraging the growth of weeds, &c. prevent their growth. It may be added, it bares them to the unaccustomed force of the winds, which often does serious injury, as is often witnessed in groves of sugar maple, which have been deprived of their protection, by the other timber having been cut away.

6. Woods intended for timber are excepted from the preceding rule; as that growing in thick shade, and moist air, is not so hard and tough as that which has the benefit of the sun and free air. Upon this we remark, that *timber* trees ought to be of the second, not of primitive or forest growth. The best timber trees are from isolated clumps, or belts along permanent division fences, as we have seen in Pennsylvania, of second growth, where trees are thin from the outset, and not where they are made so by the axe, after they have attained to large size. These belts, by the bye, we particularly recommend to the notice of our readers, not only as an economical mode of obtaining timber and fuel, but of giving shelter to cattle and crops, and as imparting beauty and health to the farm and landscape. The remark is particularly applicable to the bleak exposures of the farm, as the west, north and north west. Crops are specially benefitted by the shelter they afford in winter; and both cattle and crops are benefitted by them in summer.

7. Recommends, that upon all poor and stony lands, unprofitable for tillage, the growth of trees be encouraged, as the most profitable use to which they can be applied. It also gives directions for planting the acorn, the oak being deemed the most valuable tree to plant; but these directions apply to the seeds of many other forest trees, many of which are worth propagating in this way, as the maples, beech, ash, &c. The directions are, to gather the acorns in the autumn; make a bed of loam two inches deep; on this plant the acorns two inches deep, we should say one inch; over them lay another bed of six inches of earth; over that another layer of acorns, and so on, as far as occasion requires. Cover the whole to preserve them from frost, and plant them where they are permanently to grow. We consider the last as unnecessary. The seeds of all forest trees, as they fall and lay, are exposed to frost naturally, and yet they do grow; and so they will grow if artificially managed.

8. Directs the mode of planting the seeds where it is intended to grow permanently,—which is, to make a hole with a pick axe, drop the acorn, and cover it with two inches of earth. We dissent from this. A plantation is as much benefitted, by the ground being previously broken and pulverized by the plough and harrow, as a cultivated crop—and it should be so prepared before the seeds of forest trees are deposited in it. A mistaken idea is too common, that trees and shrubs should live, and grow, and thrive, any where they may be planted, without reference to the nature and condition of the soil in which they are planted, or to the care which is afterwards bestowed upon them. Trees are like cultivated crops. They derive their principal nourishment from the soil. The more food they can find there, adapted to their wants—the more facility that is afforded them, by a mellow soil, of extending their roots, to obtain this food—the greater will be their growth, and ultimate product. A man who would derive extra advantage from his trees, must bestow upon them the care and attention he would upon a favorite animal or favorite crop.

9. Directs, as another mode of propagating the oak, to *pare* the earth with a plough, to plant the acorns in rows, and cover them with the turf. We would, for the reasons already stated, substitute, *plough and harrow well*, for pare, and direct the acorns to be then planted.

10. Recommends that the society take steps to encourage the cultivation of wood upon the sea coast, not only as a means of furnishing fuel and timber, but as a means of fertilizing the soil: the leaves of forest trees which fall in autumn, producing a rich mould.

*Efficacy of nitre in steeps of seed grain*—a paper by Robt. Johnson, Esq. then a senator from Dutchess. After stating his own experience of its benefits in a steep for seed corn, he states a prominent case of its benefit to seed wheat. His neighbor sowed his main crop of wheat at the usual time, a fortnight later he sowed another parcel, the seed of which was steeped in a pickle in which salt petre had been dissolved. The latter ripened first, although the seed and the soil were the same as the first, grew four inches longer, and was at least twenty-five per cent better than the early sown, and which had not received salt petre.

### Analogy between Medical and Agricultural Education.

The physician and surgeon, to qualify them for their professions, of preserving life, are required to study the anatomy of the human frame, the functions of every part of the system, and the nature and quality of whatever is requisite to administer to its wants, or to avert or remove the ills which it is heir to. Without this knowledge he can but *guess* at the cause or seat of disease, and of course his prescriptions must be questionable, and often hazardous. A knowledge of these matters cannot be acquired by bare practice. It must be obtained from the teachings of ages—in schools of medical science—in the dissecting-room. Hence the laws of every civilized people require in the pupil this preliminary study, before he is permitted to practice the art professionally. And no intelligent man, who justly appreciates the necessity of the science to perfect the art, likes to trust his health and his life, in the hands of a pretender, who knows nothing of the great principles of the business which he professes to practice.

So with husbandry. It embraces principles of science, upon which good modes of practice must necessarily be based; and without a knowledge of these principles, the labors of the farmer, like the prescriptions of the quack, must be either *guess work*, or confined to the routine in which he has been instructed. His soil and his animals are liable to sterility and disease which he is ill-qualified to cure. Unless he knows something of the composition of the one, and the anatomy of the other, as branches of natural science, he is not likely to discover the true cause of an evil, nor to apply to it the right remedy. We will give a single illustration in the alternation of farm crops. It is now universally admitted, that the alternation of crops is highly conducive to good husbandry. But why is it so? Science, who expounds the laws of the Creator, in regard to inanimate matter, not only furnishes a satisfactory answer to the question, but suggests the classes of farm crops, and the order of succession, that ought to alternate and follow each other. Again, —gypsum, lime, marl and ashes, are beneficially applied to some soils, to some crops, and in some seasons, while they are not beneficial upon other soils, to other crops, or in other seasons. Science can alone explain these seeming contradictions. In a school of scientific and practical agriculture, in which a series of experiments should be continually going on, these problems would ere long be solved; rules of practice would be laid down; the results, and the natural causes of these results, would be explained, and the community, and every member thereof, who had a latent spark of improvement, or the ambition to improve his condition, would seek for, practice, and profit, from the discovery. In this, agriculture differs from most other professions. While in other professions, the benefits of improvement may be monopolized by an individual, or a small number, improvements in husbandry are accessible to all, who are not too conceited to learn, or too indolent to practise, from the examples of improvement which are every day making around them.

The result of the analogy which we have drawn, between medical and agricultural education, is this,—that science is equally beneficial to both; that while the one is destined to preserve and prolong life, the other is charged with nourishing it, and of multiplying its comforts and enjoyments; and that both are, consequently, entitled to the protecting care of an enlightened community.

### Pruning Fruit Trees.

This operation is directed to be performed, by a writer in the Horticultural Register, *in the winter*. The common practice is to prune *in the spring*. Both we conceive to be wrong. It is unnecessary again here to repeat our reasons, for pruning *at mid-summer*, as we have already twice published them in the Cultivator. We will only add, that our opinion in this matter is fortified by the philosophy and practice of the late Rev. Dr. Dwight—(see last Cultivator)—and by four years' observation and practice in our own grounds. We prune in the last of June and first part of July. We earnestly recommend a *trial* of the practice.

The objects of pruning are at least three fold. We trim shade trees to produce symmetry of form. We trim forest trees to produce a handsome and valuable bole, or stem, for timber. And we prune fruit trees for the double purpose of giving them a good shape, and of inducing them to bear well. To the pomologist that shape is most handsome, in a fruit tree, which indicates the best bearing qualities. It is remarked, particularly of the apple, that upright shoots produce less abundantly than those which grow horizontal, or deviate materially from an upright form. Hence, in forming the head of a young apple tree, it is customary to take out the upright shoot, when the tree has attained a proper height, say seven to nine feet, and to leave three or four laterals or limbs to form the head. And as pruning does not increase the quantity of wood, but has a different tendency and effect, by lessening the leaves, which are the organs of nutrition, the upright shoot should not be taken out until the laterals have acquired considerable wood and foliage. In pruning fruit trees, all limbs which are likely to interfere with each other, should be taken out while they are small. The head of the tree should be kept open, so as to admit light and air, essential to the maturity of the fruit. In pruning all trees in the nursery, the limbs should be left always upon one-third of the stem, that is, only two-thirds of the stem should be denuded of limbs.

### Tunis Mountain Sheep.

About thirty years ago this breed of sheep excited much attention in Pennsylvania, and the more southern states, several having been imported by Judge Peters and Commodore Barron some years before that time. They belong to the broad-tailed, or five quarter species—the tail weighing from six to sixteen pounds. These sheep were extolled for their great weight, good health, fineness of meat, early maturity, and quality of fleece. Individual animals weighed 175, 192, and 214 pounds alive. Several of the Philadelphia butchers and victuallers certify that their meat was uniformly superior to any in the market, that they fatten with little food, and are uniformly healthy. Maj. Raybold butchered 2,000 broad-tailed sheep, and is decidedly of opinion the meat is better than that of any other sheep, and that the Tunis sheep fattened the most speedy; and "I have slaughtered," says the Major, "half and three-quarter blooded lambs, many of them weighing fourteen and fifteen pounds a quarter." We should be very much obliged to any correspondent, who would furnish us an account of the present condition, value, &c. of these broad-tailed sheep.

It is matter worthy of note, that the Merino sheep of Spain are supposed to have attained their present high character from crosses with rams from the north of Africa, perhaps of the stock from which the present Tunis breed have descended. These crosses, and consequent improvement of the Spanish flocks, are thrice noticed in history—first in the time of the Romans, by Columella; thirteen hundred years after that by Pedro IV. of Spain; and again by Cardinal Ximenes, two hundred years subsequently.

### Humus—Humic Acid.

As we have already observed, these are terms applied to the fertilizing matters in the soil, which are produced by the decomposition of animal and vegetable substances, placed there by nature or art; and which, through the agency of heat, moisture and air, are converted, after death, into the pabulum, or food, of the farmer's crops, and ultimately into animal food. Philosophers may mystify the subject—but after all, it is enough for the farmer to know, that these highly fertilizing matters, are nothing but DUNG, deprived of it gaseous properties, which by the bye are equally fertilizing, by the process of fermentation—they are organic matters, principally carbon and hydrogen, variously modified, according to circumstances, by the addition of oxygen, nitrogen, salts and earths. All the farmer has to do, to obtain this valuable food for his crops, is judiciously to deposite the raw material—the dung—in the soil, and the elements—nature—will readily perform the manufacturing process. But further to satisfy the scientific, or curious, we proceed to quote the remarks of some of the best modern investigators in the matter. We will begin with what we deem the *highest* authority, Thäer, the head of the Prussian School of Agriculture.

"Besides the four essential elements of its composition [oxygen, hydrogen, carbon and nitrogen,] humus also contains other substances in smaller quantities, viz. phosphoric and sulphuric acids, combined with some base, and also with earths and salts. Humus is the product of living matter, and the source of it. It affords food to organization, [i. e. to animals and vegetables.] Without it nothing material can have life. The greater the number of living creatures, the more humus is found; and the more the humus, the greater the supply of nourishment and life. Every organic being in life adds to itself the raw materials of nature, and forms humus, which increases as men, animals and plants increase in any portion of the earth. It is diminished by the process of vegetation, and wasted by being carried into the ocean by its waters, or it is carried into the atmosphere by the agency of the oxygen of the air, which converts it into gaseous matter."—(See Thäer, *Grundsatze der Rationellen Land wirthschaft.* Berlin, 1810. 4 vols. 4to.

We ought to have stated, that what is now more generally distinguished by the term humus, first attracted the philosophical investigations of Sprengel, who noticed it in exudations from the bark of the elm, and denominated it ulmin. We quote next from the Penny Cyclopædia, p. 221.

"This substance has been called *vegetable mould;* but as this is not a very distinct term, we shall, after Thäer and other eminent writers on agriculture, adopt the name of *humus* when speaking of it. *Humus* is a dark, unctuous, pliable substance, nearly uniform in its appearance. It is composed of oxygen, hydrogen, carbon, and nitrogen, which, with the exception of nitrogen, which is found only in some substances, are the elements of all animal and vegetable substances. It is the result of the slow decomposition of organic matter in the earth, and is found in the greatest abundance in rich garden mould, or old neglected dunghills. It varies somewhat in its qualities and composition, according to the substances from which it has been formed, and the circumstances attending their decay. It is the *product of organic power,* such as cannot be compounded *chemically.*"

We close our extracts with one from Raspail, who is distinguished as among the most indefatigable and intelligent chemists of the day. In controverting the theory of Sprengel, which it is not necessary here to particularize, he remarks as follows:

"What we have learnt from experiment of the insolubility of *humus,* and the origin of its apparent acidity, destroys all the authority of the theory which Sprengel and other authors had reared on a different supposition. The part which the *humus* has to act, seems to be merely to absorb a sufficiency of oxygen to furnish the herbaceous part of the plant with the carbonic acid which it is the office of the green substance to decompose for the nourishment of the growing textures; and possibly one day may confirm the idea that, by artificially supplying to the plant the carbonic acid which is necessary for its growth, the use of any kind of manure may be dispensed with(?) In fact, if a small plant be reared in pure sand, taking care to water it frequently, it will thrive and flower without difficulty. It cannot, in these circumstances, obtain the carbon of its texture, except from the small quantity of carbonic acid contained in the atmosphere. The roots, then, transmit to the plant only water and the salts of which it can be the vehicle; and the part which is exposed to the air is destined to absorb the gases which are necesssary for the formation of the textures."

We interrupt the extract here, to object to any hypothesis which dispenses with manure as *indispensable* to the fertility of the soil—to supplying the raw material, artificially, for vegetable mould, or *humus,* which one writer has termed *the cooked food of plants.* The plant in pure sand may grow and flower, by the aid of water and the carbonic acid in the atmosphere, but will it fructify, will it reward the labor of the husbandman who nurses it? But we resume our extracts from Raspail.

"Consequently it is not the leaves of the leguminous plants that absorb the gypsum which is dusted over them, but the roots, when the dew or rain has washed it into the soil; and hence the advantage which has been found of applying this powder a little before the dew comes on."

This hint comes in corroboration of what we have long believed, that gypsum benefits plants through the medium of their *roots,* and not of their *leaves—in* the soil, and not *above* it. Hence we have recommended that it be ploughed or harrowed in on its application in arable husbandry;—and hence, probably, its inefficiency, applied to the surface, in dry seasons, when there is not rain sufficient to carry it to the mouths of plants, or to decompose and fit it for those minute and delicate organs. We add another extract from Raspail, which cannot fail to interest the intelligent farmer.

"The use of quick-lime in the preparation of composts, has no other object than to supply the place of potash, which would be too dear, for the purpose of disorganizing the texture intended to form the manure and of disposing them, by carbonizing, for condensing and combining with the oxygen of the air, in order to furnish that part of the plant which is above ground with carbonic acid, which its leaves may elaborate. So also the ploughing in of the manure has no other effect but to preserve these textures in a state of moisture indispensable to their decomposition. Finally, all these perparations would be useless, if the soil in which these treasures of vegetation have been buried, were either not sufficiently porous to admit the passage of the air into it, or so much so as not to retain, to a certain degree, the air and water which the manure absorbs. Soils that are too clayey, and those that are too sandy, are, in fact, sterile; and, in order to fertilize them, it is necessary to mix them; but, as the textures of plants assimilate principally the carbonate of lime, the fertilizing of the soil is completed by enriching it with calcareous matter."†

### Agricultural Society of New-Castle, Del.

At the quarterly meeting of this society in January, a committee appointed to "inquire into the causes of the scarcity and high prices of cattle, and to point out, if possible, the proper remedies by which the large farming and grazing interests of the state may augment their supplies, and maintain their reputation, among the graziers and feeders of the country," reported, among other causes, the following:

"1. The neglect of the farmers in the middle states in raising so small a portion of their young cattle except for the dairy, and universally adopting the culpable practice of selling them for veal, when from four to eight weeks old.

"2. The increasing demand for this description of stock, in the interior of the country, to the west and south-west, hitherto but partial grazing districts.

"3. The moneyed derangement of the country, within the last two years, which has lessened considerably the number of drovers, who from their heavy operations are necessarily dependant more or less on bank accommodations.

"4. The injurious practice which has for some time been operating against the graziers, compelling them to buy stock second and third handed, from companies and individuals, who go out and meet the cattle on their way to market, monopolize the trade, buy up, and retail out to farmers at an advance too great for their profits, or for the good of the public, as to their supply of beef at a reasonable price.

"To remedy in a great measure the first and second evils alluded to, the committee are of opinion that the farmers and graziers of the Atlantic states should all at the same time turn their attention to raising more of their own oxen and store cattle; believing it will pay them well to do so, especially by crossing our large native breeds with the fine imported Durham and Devon cattle of England, now so common amongst us.

"Of this the committee are more positive since visiting the celebrated New-Jersey cattle now in feeding by Mr. Edward Tonkins, of Gloucester county, which are three-fourths Durham from large native cows. Two of his large oxen will now nett, at seven and a half years old, 4,000 to 5 000 pounds of beef; and his three year old stock of the same breed, are now worth, to the butcher, about 120 dollars per head, though they have never been housed in winter, nor had more than a fair and ordinary keeping.

"To remedy the last evil alluded to, your committee unanimously recommend a meeting at an early day, of the farmers and graziers of this county, and the adjoining counties of Pennsylvania, for the purpose of forming an association, that shall, by experienced and competent agents, selected from among themselves, go into the cattle districts and buy in first hands on their account, and bring to stands established in this vicinity, such cattle as shall be ordered by the association; none of which shall be sold or bartered on the way, or disposed of by said agents until after their arrival at said stands, and not then, till sanctioned by the association. In this way alone, the committee believe, will the monopoly and high price of stock be met and regulated by the farmers and graziers themselves, a full supply always ensured to them of cattle of the best quality and at the lowest market price."

*In the culture of Spring Wheat,* in districts infested by the grain-worm, we feel justified in recommending, from the personal observations we have made, and from the information we have been able to obtain from others, that if the sowing is delayed till the 12th or 20th May, the later as we progress north, the crop will not be likely to be injured by the worm. Grain sown very early *may* also escape, as has been the case with some sown in April; but we want further evidence before we venture to recommend the practice. Should the early sown in any case escape uninjured, or late sown be injured, we shall take it as a favor to be notified of the fact. There were instances in this vicinity of the Italian being sown as late as June, and doing well.

† New System of Organic Chemistry, by F. V. Raspail. Henderson's translation. London: 1834: p. 172, &c.

### Statistics of American Wool and Woollen Manufactures.

We have been presented with a small volume of 144 pages, duodec. giving a detailed account of the sheep and woollen manufactories in the northern states, and a partial account of the same in the other states; to which is added two valuable communications from Col. Jarvis, of Weathersfield, Vt. and of H. D. Grove, of Hoosick, in this state; the first giving the history of the introduction of the Spanish Merino sheep, and the writer's mode of treating them, and the latter a like history, and his mode of treating the Saxon Merino sheep. These two gentlemen were particularly engaged in the introduction of the sheep they describe. The statistics are compiled by G. Benton and S. F. Barry; and the work may be had at Little's.

The following is an exhibit of the number of sheep in each state, and of the woollen manufactories,—the number of pounds produced in each state, and its value, at 50¼ cents, which seems to have been the average price for the last ten years.

| | *Sheep.* | *Sets machinery.* | *Quantity. lbs.* | *Amount dollars.* |
|---|---|---|---|---|
| Maine, .... .... | 622,619 | 24 | 2,023,512 | 1,021,873 |
| New-Hampshire, | 465,179 | 43 | 1,511,532 | 763,475 |
| Vermont, . ..... | 1,099,011 | 100 | 3.571,786 | 1,803,751 |
| Massachusetts, .. | 373,322 | 519 | 1,213,297 | 612,715 |
| Rhode Island, ... | 81,619 | 30 | 265,262 | 133,957 |
| Connecticut, .... | 265,169 | 184 | 829,299 | 410,313 |
| New-York, ..... | 4,299,379 | 234 | 13,974,606 | 7,057,176 |
| New-Jersey, .... | 250,000 | 20 | 812,500 | 410,313 |
| Pennsylvania, .. | 1,714,640 | 123 | 5,572.580 | 2,814,158 |
| Delaware, ..... | 150,000 | 20 | 487,500 | 246,187 |
| Maryland, ..... | 275,000 | 15 | 893,750 | 451,343 |
| Virginia, ..... | 1,000,000 | | 3,250,000 | 1,641,250 |
| Ohio, ..... ..... | 1,711,200 | 30 | 5.561,400 | 2,808,500 |
| Kentucky, ..... | 600,000 | | 1,950,000 | 984,750 |
| Total, ..... | 12,897,638 | 892 | 41,917,324 | 21,168,246 |

There was imported, in 1836, over and above our exports, 12,296,249 pounds of foreign wool, mostly of coarse quality, costing abroad less than eight cents per pound, and not subject, therefore, to duty.

Of this gross amount of wool, it is estimated that thirty-one millions of pounds were worked up in the manufactories, leaving twelve millions for family manufacture, three millions and a half pounds of which are supposed to be worked up in New-York, three in Pennsylvania, and two in Ohio.

The manufacturng establishments are employed in the following fabrics, viz: in broadcloths 344; cassimeres 178; sattinets 574; flannels 158; jeans, linseys, &c. 210: blankets, yarns and hats 24; carpets 61. Total sets of machinery 1,549.

Hoosick has 37,807 sheep, the greatest number of any town in this state; and Dutchess county 234,294, the greatest number of sheep of any county in the state.

The matter of this volume is interesting to the wool grower, manufacturer and political economist, and we recommend it to their notice.

### In regard to Lime,

To be employed in agriculture, we find some new suggestions, and we think important ones, in a communication in the Farmer's Cabinet. They satisfactorily explain why ground limestone is not so good for land as effete lime, or lime which has lost its caustic quality, after being burnt, by the re-absorption of carbonic acid, and furnish useful hints for the application of lime in husbandry. The writer remarks on the first point—

"We cannot, by grinding, destroy the attraction of cohesion in limestone; there will be two or more atoms adhering. While this is the case it never will be converted into a super-carbonate. Destroy the attraction of cohesion, as the result shows is done by burning and slaking, and it will ultimately be converted into super-carbonate, when incorporated with the soil; is then soluble in water, and acts beneficially or injuriously, as the quantity is in accordance with the wants of the plant, or in excess, as other manures do."

Upon the application of lime the writer says:

"I have been in the practice of using lime for twenty-five years; there is little of the land that I occupy that has not had 200, and some 300 bushels per acre, applied in that time. In my first applications, it was slaked, spread and incorporated with the soil as soon as practicable from the kiln. But for more than twenty years I have spread but little that has not lain from three to twelve or more months, and when spread avoided all

means that would incorporate it with the soil, that necessity did not urge for the accomplishment of other objects. The change was the fruit of a doubt of the ultimate utility of using lime to hasten the decomposition of vegetable matter contained in soil under regular cultivation, and that this questionable advantage was all I conceived I had to place against the known and certain result, that by so applying it, it would be converted into carbonate at the expense of a material contained in the soil that there was, or in future would become, capable of supporting a vegetable; and that so far as it could be converted into a carbonate, before mixed with the soil, was clear gain; and I regard my experience as having fully sustained the conclusion."

### To render Corn prolific.

It seems to be a great desideratum with farmers, to plant that variety of corn which will produce the most ears on a stock. This criterion of a good variety is deceptive, and passes for more than it is worth; and withal leads to a neglect of the main point which should engage the farmer's attention. It is not the *number of ears on a stock*, but the *number of bushels on an acre*, that should be the first aim of the grower; and this depends not so much on variety, as upon richness of the soil. Corn, like cattle, will produce according to the food which is consumed; and if this food is not in the soil, it matters little how many ears grow upon a stock, the product will be in the ratio of the food: if there are many ears, they will be comparatively small; if but few, comparative large, in proportion to the richness of the soil. An acre of good pasture will carry, say five sheep, through the season, and fit them for the butcher; but if the acre is made to carry ten sheep, they cannot thrive, and will not be fit for the butcher. And again—if the acre of pasture is poor and light, the five sheep put upon it will be stinted in food, and will not thrive. The gain in the sheep will be in proportion to the quantity of herbage they convert into mutton and wool. So with corn. The roots of this grain, like the sheep, range over the whole pasture of a field, gather the nutriment which it contains, and this is transmuted into grain and forage; the aggregate of which is not very dissimilar, whether the ears are three, two or one upon a stock, provided due regard is had in planting to the habits of the variety—so that the pasture be fed off clean, without being overstocked. We have frequently observed, that we have more ears upon a stock on the borders of our corn field, and where the intervals are large between the hills, or some of the stalks deficient, than we have in the centre of the field, or where the planting is close; and that the size of the ears, or the aggregate of the product, is always in proportion to the richness of the soil, and the excellence of its cultivation. The atmosphere undoubtedly contributes essentially to the food of the corn crop, where the surface of the soil is kept clean, open and permeable to it. The fermentation of long dung, in the soil, and the frequent use of the cultivator, tend to keep it in this favorable condition. There is no danger of gorging or injuring the corn crop with long manure, if it is spread and buried with the plough; nor are its fertilizing properties so much impaired, in using it for corn, potatoes and ruta baga, in this way, as they are by the system of *summer-yarding* it, so generally adopted in some counties lying west of Albany.

The remarks which we have made upon Indian corn, tending to show, that the product depends essentially upon the quantity of food which it finds in the soil for its subsistence, applies, with greater or less force, to all farm crops. The economy of management depends upon the judgment of the farmer in adapting the food, both as regards quality and quantity, to the wants of the particular crop. But let us not be misapprehended on one point: unfermented dung should not be used for the small grain or other crops which ripen at mid-summer—until it has been first prepared and fitted for them, by the autumn-ripening crops, as corn, potatoes, ruta baga, &c. These latter subsist principally upon the gaseous and volatile portions of the manure, which are first disengaged from the mass in the process of fermentation, and which are rather deleterious to the former, at the season when they are maturing their seeds.

Another criterion which some farmers consider as essential to a good variety, is smallness of cob. So far as this conduces to the early and perfect drying of the grain, it is entitled to weight, but no further. The objection to a large cob was answered by a gentleman, by asking the objector, whether it required most cloth to make him or his son a vest, pointing to a boy standing by his side? The circumference of a cob two inches in diameter, will contain double the quantity of grain that a cob of one inch in diamater will contain.

There is no doubt but the habits of corn change with change of climate; or in other words, that the dwarf northern varieties, when taken to the south, in a few years become acclimated, and assume the tall growth of the south. It is hence advisable, that where early maturity is desired, as it seems to be in our latitude, seed should be occasionally procured from the north. Another means of preserving the early ripening properties, is to select for seed the ears which ripen first. We have raised the Dutton corn, obtained from the green mountains of Vermont, for sixteen years; and yet, taking care to save for seed the earliest matured ears, we are not sensible that it ripens much, if any, later now than it did when we first planted it

### Varieties of Indian Corn.

Dr. Brown, in an essay lately published in the Farmer's Cabinet, enumerates thirty-five varieties of Indian corn which he has in his cabinet. He divides them into five classes besides sub-classes. We give the names, as well for future reference, as matter of curiosity.

A. YELLOW CORN.

*A. a.* No. 1. Genuine gourd seed, of 24 rows; No. 2, of 22 rows; 3, of 20 rows; 4, of 18 rows; 5, of 16 rows; 6, of 14 rows; 7, of 12 rows.

*A. b.* No. 8. King Philip Indian corn, 8 rows.

*A. c.* No. 9. Sioux, or early flint, 12 rows; 10, Sioux of Pennsylvania, 12 rows; 11, Sioux and gourd seed mixed, 16 rows.

B. WHITE INDIAN CORN.

*B. a.* White flint. No. 12, genuine white flint, 12 rows, Virginia; 13, white flint, 10 rows; 14, early white flint.

*B. b.* White flour. No. 15, from Peru, 8 rows; 16, Pennsylvania, 8 rows, called Smith's early white; 17, New-Jersey, 8 rows; 18, New-York, 10 rows.

*B. a.* and *B. b.* No. 19, Mandan Indian corn, a mixture of 12 and 15.

*B. c.* No. 20, early sugar or sweet corn, 12 rows, grains shrunken.

C. HAEMETITE, OR BLOOD-RED INDIAN CORN.

No. 21. Common sized, 12 rows and red cob.
No. 22. Red cob with white grains.
No. 23. Reb cob with yellow grains.
No. 24. Red cob with brown grains.
No. 25. Red cob with white gourd seed.
No. 26. Red cob with gourd seed and yellow flint.
No. 27. White cob with yellow grain.
No. 28. Speckled red and yellow grains, on a white cob.
No. 29. The same on a red cob.
No. 30. Dwarf haemetite, commonly called Guinea corn.

D. BLUE CORN.

No. 31. Blue corn, 10 rows.

*E.* No. 32. The corn of Texas; each grain is inclosed in a pod or husk, and the ear in a husk.

No. 33. Corn found in the envelope of a Mexican mummy.
No. 34. Cobbett corn, grown in England.
No. 35. The famous Dutton corn.

We take the liberty of adding to the above list five other varieties in our possession, seemingly not embraced therein, viz:

1. Lake Superior corn, ears six inches, 12 rows, reddish brown color, said to be very early—from S. Robinson.

2. Squaw corn, 8 rows, blue grain, also early.

3. Corn from Trieste, on the Adriatic—ears six inches, and semi-conical, 12 and 14 rows, orange yellow.

4. Rice corn, ears four inches, grains like rice, and ears four inches long.

5. A yellow 12 rowed corn, from Vermont, ears considerably smaller than the Dutton.

Dr. Brown gives four criteria, the three first from Mr. Taylor, which should be regarded in selecting our seed corn, viz: 1, The most stalk; 2, the largest cob; 3, longest grain; and 4, early growth and quick culture. The reason for the first is, that a man can gather more grain, stalk, blade, top, shuck and cob, of large than he can of small stalks. This quality would not be so highly esteemed in the north; for tall large growing would be here late ripening corn; and besides, corn of this description will not bear planting so thick, and consequently will not yield so much per acre, as varieties of more diminutive growth. The large cob is preferred, because it gives the most corn. 3. The longest grain, because it decidedly settles the superiority of the farinaceous product. We dissent from this conclusion, and think the superiority in farinaceous product depends more upon *weight* than the *length of the kernel*. The Dutton, it will be seen by the communication of J. Wright, has weighed 69 lbs. the bushels. This has a short kernel; and yet we doubt if any long kerneled variety can be found to weigh so heavy, or to afford so much nutriment. The fourth requisite, early growth and quick culture, is a very important one to northern farmers.

*New Agricultural Publications.*—The *Practical Farmer* is the title of an agricultural paper which has been commenced at Mechanicsburgh, Pa. to be published monthly, on a sheet of 24 pages. The *Buckeye Plough-Boy*, on a 12mo. sheet, has been commenced at Cayahokia Falls, Ohio.

### "Help one another."

This is an excellent every-day admonition, applicable to all ranks; and if acted upon with brotherly kindness, how much wretchedness and crime would it avert—what incalculable blessings would result to society. But it is not our present purpose to moralize upon the text generally, but merely to illustrate its beneficial tendency in its particular application to husbandry.

"*Help one another*" to do good, was the great maxim that prompted Sir John Sinclair, in his eminently successful labors to multiply the products of his native soil. He, more than any other man, effected the establishment of the British Board of Agriculture, and rendered it subservient to the noble purpose of multiplying the resources and comforts of his countrymen. He was principally instrumental in effecting the grand improvements in Scotch husbandry—improvements which, in sixty years, have quadrupled the products of her soil—which have converted the noisome moss into fields of luxuriant grain, reclaimed the barren heath, and covered her hills with herds and flocks. It is no stretch of fancy to suppose, that his individual efforts to help others, by his example in improvement, by enlightening the public mind in rural affairs, and in inciting to industrial emulation, and consequently to virtue, has annually added millions of wealth to the British empire. How many thousand individuals may at this day say he has bettered their condition! how many should bless his memory! How much more useful are the labors of such a man to the human family, than those of the chieftain in offensive war, who, at the head of armies, devastates towns and provinces, slaughters thousands, and reduces their widows and and offspring to penury and wretchedness.

The late Chancellor Livingston was another example of the great good which an individual may render to society, in rural matters, by acting upon the principle —"help one another." He was among the first and most active in efforts to improve our agriculture, by introducing new modes of culture, and valuable stock, and in illustrating their advantages by his practice and his writings. He has been eulogized as a statesman, a civilian and a patriot; and yet perhaps in no department was his usefulness more conspicuous, than in the departments of husbandry. His disposition to *help others* was a prominent trait in his character, and contributed very much, if we mistake not, to raise the agriculture of Dutchess to a pitch of excellence, excelling that of any other portion of the union. As an agricultural writer, he was not surpassed, in extent or usefulness, by any other citizen of the state; and his ample means were liberally employed in demonstrating the utility of what he recommended. Who will pretend to estimate the benefits, in dollars and cents, or in human happiness, which have been produced, by his individual exertions to improve our agriculture, to the state at large, and particularly within the sphere of his immediate influence.

We might cite innumerable examples, from the dead and the living, to show the immense benefits that have resulted to society from praise-worthy efforts to "*help one another*," of men engaged in rural affairs. The two we have cited will suffice to impress upon all, we trust, the importance of adopting the precept: and though we may not be able, individually, to do *much*, we may each do *something* to *help one another*; and these somethings, in the aggregate, will effect a great deal towards improving the moral and social condition of society. We see the benign influence of this precept happily illustrated in the conduct of the Friends towards each other; and it were well for society if these examples of brotherly kindness were more generally followed by other religious denominations. The duty rests upon all, and the recompense is alike attainable by all.

But we come now to the *improvement* of our subject—which is, to enforce the precept "*help one another*"—particularly upon our correspondents, and upon those who may *become* useful correspondents, and to ask them to communicate for our columns, whatever in their practice or knowledge may conduce to the benefit of our readers. If an individual, by cultivating a new kind of grain, root or pulse, or by any new mode of practice, adds ten per cent to ordinary profits, his discovery, or improvement, or new mode of practice, if made known, and adopted by his neighbors, will in like manner add ten per cent to the profits of each of them. Say, for instance, that a farmer, by discovering a means of preventing the ravages of the grain-worm, saves from destruction fifty bushels of his wheat crop, worth one dollar per bushel—the gain to him is fifty dollars. Now if this improvement is made known to twenty thousand farmers, as it would be in a short time if published in the Cultivator, and successfully adopted by them, it would add, in a single year, one million of dollars to the solid wealth of the country. Although

the case we have hypothecated may be considered extravagant, and not likely to happen, yet it is but one of hundreds that may happen; and shows what great public advantage may grow out of a general disposition to promulgate useful information in husbandry, through the medium of agricultural journals.

### On the Germinating of Seeds.

Seeds often fail to grow; and the seedsman is often faulted, for vending bad seeds, when the seeds are really good, and when the cause of their not growing is owing to the gardner or planter. To induce germination, moisture, atmospheric air, and a certain temperature, are indispensable; and it is also requisite that light be excluded from the seed, until the nutriment in the seed is exhausted, or until the root can draw nourishment from the soil. The first effect of the air, heat and moisture upon the seed is, to change its properties—to convert its starch into sugar—into a sort of milky pulp, the proper food of the embryo plant. If at this stage the seed becomes dry, its vitality is believed to be destroyed; but if these agents are permitted to exert their influence, the contents of the seed swell by degrees, and the first point of the future root having formed, breaks through the shell in a downward direction, and about the same time the first point of the future stem comes forth in an upward direction. The presence of air, heat and moisture are as indispensable to the growth of the plant, as they are to the germination of the seed.

Now it often happens, that when seeds are planted in fresh stirred ground, or when the soil is moist, they undergo the incipient process of fermentation, and the earth not being pressed upon them, and dry weather ensuing, the moisture is abstracted, and the seeds perish. Too much moisture is also often destructive to the vital principle of seeds—and others again are buried too deep to be vivified by solar and atmospheric influence. The first object in planting, therefore, should be, to place the seed just so far under the surface, and so to cover it with earth, as shall barely secure to it a constant supply of moisture. There are many seeds, as of the carrot, parsnip, orchard grass, &c. which, if not previously steeped, or the soil well pulverized and pressed upon them, fail to grow for want of moisture. Hence, in sowing orchard grass, it is found prudent to spread it upon a floor and sprinkle it with water, before it is sown, and to pass a roller over the ground after the seed is sown. And hence, in light garden mould, it is advisable to press, with the hoe or spade, the earth upon all light seeds after they are sown.

But we would draw the attention of the farmer, as well as of the gardner, to another mode of preventing failure and disappointment in the growth of certain seeds—and that is, by *sprouting* them before they are planted. This may be conveniently done with Indian corn, pumpkins, mangold wurtzel, beets, &c. on the farm, and with melons, cucumbers, beans, peppers, and a great number of other seeds which are assigned to the garden. The mode of doing it with the field seeds we have named is this; steep the seed twelve to twenty hours in water of a tepid or warm temperature—then take off the water, and leave them in a warm place, covered to exclude the light and prevent their drying, or in a dark cellar or room, and the radicles or roots will shoot in a few days, and may then be planted without injury. Being obliged to suspend our planting for four days, on account of rain, we found our seed, which had been previously steeped, and set by in a dark room, with radicles two or three inches long. It was planted with but little inconvenience, and did remarkably well. Mr. J. Nott sprouted a part of his corn last year, while a part of the seed was not sprouted—and what is worthy the particular notice of the farmer, he assures us that *the sprouted corn was not injured by the wire-worm, while the unsteeped seed was seriously injured*, although planted by the side of each other. Mr. Nott accounts for the difference in this way: The wire-worm attacks the chit, and feeds upon and destroys the germ; but the radicles having protruded, and not being to the taste of the worm, the insect attacked the solid part of the kernel, where its progress was too slow, and too remote from the germ, to retard its growth. Mr. Nott also sprouted his mangold wurtzel seed, and planted it so late as the 27th June. Almost every seed grew, and the crop might be called a good one early in September.

To sprout garden seeds, procure two sods, of equal size, say eighteen inches square; lay one down in the corner of the kitchen chimney, grass down; lay your seeds upon it, if small wrap them in a piece of brown paper; then place the other sod upon them, grass up—water well with warm water, and the seeds will sprout in twenty-four to forty-eight hours.

There is one manifest advantage in sprouting seeds—it tests their goodness, and shows whether they will or will not grow. A small quantity of seed corn, submitted to this test before planting, would in many instances prevent great loss to the farmer.

### What quantity of Manure should be applied to the Acre?

The answer to this question involves many considerations which preclude a definitive reply—such as the condition of the land, the quality of the manure, and the kind of crop. Too much, as well as too little manure may be applied. What would be beneficial for an autumn-ripening, or hoed crop, would be prejudicial to a small grain, or summer-ripening crop, and more particularly if the manure is applied in an unfermented state, and be withal a waste of fertilizing matter. Twenty tons to the acre would not be too much for corn, potatoes, ruta baga, &c. if applied broadcast, and ploughed in; but if long manure, and applied in the drill, or hill, and a dry season should ensue, it might prove an injury; and if this quantity of long, or even short manure, were applied to the acre of small spring grain, it would probably cause a flush of straw, likely to be affected with rust, at the expense of the more valuable part—the grain. Dr. Coventry, late professor of agriculture in the University of Edinburgh, whose business and study it was to collect data, and make correct deductions in this and other agricultural matters, was of the opinion, that from four to five tons are yearly requisite to keep up the fertility of a soil, of the kind usually denominated spit, or tolerably rotted dung; and this supply he thinks a well managed farm may be made to produce. To show how this quantity may be obtained, and how it should be applied, we quote from Mr. Youatt, the writer of British Husbandry.

"According to that calculation," says our author, "it must be observed, that the course of crops is supposed to consist—on light soils, of the alternate plan of corn and green crops, [see New System of Husbandry,]—on clays, which do not admit of that system, that the holding contain a proportionate quantity of grass land; and that the quantity of manure should be supplied, not in small quantities annually, but in large ones, at intermediate distances of four, five and six years. Light soils, in the common course of husbandry, rarely require the application of putrescent manure oftener than once in four years, and in all cases where the clover is allowed to stand two seasons, it may be deferred without disadvantage for another year. Heavy soils may run six years without it, provided that the land be laid one year in fallow, and that there be sufficient meadow to be reckoned at least one crop in the course. It being, however, clearly understood, that—whether on light or heavy land—nothing but grain, seeds and live stock is to be sold off the farm, unless replaced with an equal portion of purchased dung; that the whole of the green crops, the haulm of pulse, and the straw of corn, be used in the most economical manner; and that some of the live stock be either soiled or fattened upon oil cake: which plan, if carefully pursued on good soils, with capital sufficient to secure an abundant working and fattening stock of cattle, ought, under fair management, to furnish an adequate supply of dung for any of the usual courses of culture."

"Having thus submitted to our readers all that occurs to us of importance on the subject of farm-yard manure, we shall here recapitulate a summary of the chief points which we deem particularly worthy of their consideration:

1. To bottom the farm-yard with furze, fern [in Yankee dialect brake,] dry haulm, [stubble, &c.] or any other loose refuse that takes the longest time to dissolve; and over that to bed it deep with straw.

2. To occasionally remove the cribs of store cattle to different parts of the straw yard, in order that their dung may be dropped, and their litter trodden, equally.

3. To spread the dung of other animals, when thrown into the yards, in equal layers over every part.

4. To remove the dung from the yard at least once, or oftener, during the winter, to the mixen.

5. To turn and mix all dung-hills, until the woody or fibrous texture of the matter contained in them, and the roots and seeds of weeds, be completely decomposed, and until they emit a foul putrid smell; by which time they reach their greatest degree of strength, and arrive at the state of spit-dung.

6. To keep the dung in an equal state of moisture, so as to prevent any portion of the heap from becoming fire-fanged. If the fermentation be too rapid, heavy watering will abate the heat; but it will afterwards revive with increased force, unless the heap be either trodden firmly down or covered with mould to exclude the air.

7. To ferment the dung, if to be laid upon arable land during the autumn, in a much less degree than that to be applied before a spring sowing.

8. To lay a larger quantity on cold and wet lands than on those of a lighter nature; because the former require to be corrected by the warmth of the dung, while, on dry, sandy, and gravelly soils, the application of too much dung is apt to burn up the plants. Stiff land will also be loosened by the undecayed fibres of long dung, which, although its putrefaction will thus be retarded, and its fertilizing power delayed, will yet ultimately afford nourishment.

9. To form composts with dung, or other animal and vegetable substances, and earth, for application to light soils.

10. To spread the manure upon the land, when carried to the field, with the least possible delay; and, if laid upon arable, to turn it immediately into the soil.

11. To preserve the drainage from stables and dung-hills in every possible way; and if not applied in a liquid state, to throw it again upon the mixen.

12. To try experiments, during a series of years, upon the same soils and crops, with equal quantities of dung, laid on fresh, and afterwards rotted; in order to ascertain the results of their application to the land. The whole quantity to be first weighed or measured, and then divided.

"The fermentation of farm-yard manure is, in fact, a subject of far greater importance than is generally imagined, for on a due estimation of its value mainly depends the individual success, as well as the national prosperity, of our agriculture. The experiments to which we point cannot, therefore, fail to come home to the interests of every man; they may be made without expense, and without any other trouble than the mere exercise of common observation and intelligence. Leaving, however, aside the discussion concerning the disputed worth of fresh or fermented—of long or short dung,—let the farmer sedulously bend his attention to the accumulation of the utmost quantity that it may be in his power to procure. The manner and the time of using it, in either state, must, however, be governed by circumstances which may not always be within his control; and every judicious husbandman will rather accommodate himself to the exigency of the case than adhere strictly to his own notions of what he conceives to be the best practice. In fine, whether favoring the one or the other side of the question, let him collect all he can; apply it carefully to his crops; and then, trusting to events,—"*let the land and the muck settle it.*"

### On Stall Feeding Cattle.

In the management of our cattle, as in the management of our crops, much is lost for want of system and regularity. The stall feeding of neat cattle for the butcher is annually increasing, and promises to increase in interest as we progress in the culture of roots. There is probably a difference of one-third to one-half, in the profits of the business, whether it is well or badly managed. Under this view of its importance, we extract from the Farmer's Series, the following compendium of the management recommended in that work, although it be not precisely the season to apply the instructions which it conveys:

"The first point is the comfort of accommodation; for in whatever way they may be placed—whether under sheds or in close ox-houses,—they should have the security of perfect shelter from the weather, with a certain degree of warmth; that is to say—if in open hammels, the sheds should be broad, the roof low, and the floor well covered with an abundance of dry litter. We are, however, decidedly of opinion, that close walls will further the object more promptly; though we do not coincide in the idea that it will be promoted by too much heat; and we should therefore recommend a moderate degree of healthful ventilation. In these stalls litter is, indeed, very frequently dispensed with,—or else sand, or any rubbish, is substituted for straw; but there can be no doubt that the animals enjoy the comfort of a dry bed as well as their master, and the more they seek repose in it the better.

"The next, is strict regularity in the administration of food—both as regards the stated quantity, and the time of supplying it. The periods may be regulated as the feeder thinks proper; but, whenever adopted, should never be afterwards altered. The ox is a quiet animal, and those which are fed in the house soon acquire a precise knowledge of the exact hour at which it is usually given: if that be transgressed, or the customary quantity be not furnished, they become restless, but if the time and quantity be strictly adhered to, they remain tranquil until the next period arrives. If no disturbance takes place, they, indeed, then generally lie down to ruminate, and nothing will be found more to forward the process of fatting than this perfect quietude; wherefore, should not only the stalls be well bedded, but light should be very much excluded, the doors should be closed, all outward annoyance as far as possible prevented—and, in short, every means should be induced to promote complete rest, ease, and contentment.

"Some persons serve it out as often as five times a day; but the most prudent, and we think the better practice, is to give it as soon as possible after day light, at noon, and some time before sunset; which enables the animals to fill their bellies; and to have time sufficient for that quiet digestion which is interrupted by too frequent feeding. In stating that the quantity should be moderate, we however alluded merely to the not allowing the animal to have so much as will cloy him; he ought always to have as much as he can fairly eat with a relish, but the moment he begins to toss it about, it will be then evident that the keenness of his appetite is satisfied, and it should be instantly removed.

"The last is thorough cleanliness. The ox house should be opened before day light, and well cleaned, both by pail and broom, from every impurity. After

the animals have been satisfied with food, whatever may remain should be immediately removed; and the cribs and mangers, should be carefully swept out, and washed, if necessary; water should then be given without limitation.* If their hides be then wisped, it visibly occasions a very pleasurable sensation: as they begin to fatten, the ancient coat falls off, and if this be accelerated by the curry-comb, the better appearance of the beast will well repay the trouble."

*The atmosphere and the dews abound in the food of plants*, in a gaseous or liquid form—with the "*cooked food*" of plants. The nutriment which they afford is principally available through the *roots* of plants, which are buried in the ground. In order that the food may reach these mouths, and contribute to the growth and perfection of the crop, the soil which covers them must be pervious to air and dew—it must be pulverized, the whole stratum or tilth—and the surface kept clean and mellow. If the latter is suffered to become baked and hardened, the air does not find admission, and the dews rest upon the surface, and are dissipated by the rays of the early sun, and are lost. Hence many grounds long in grass, become too close and compact, and lose at least a portion of these fertilizing properties of the atmosphere; and hence the utility of good ploughing and thorough tillage, and of keeping the surface, where there are hoed crops, mellow and clean. Curwen, the distinguished British agriculturist, grew field cabbages to the weight of 50 lbs. each, principally by keeping the horse and cultivator constantly at work among them, and thus feeding them with the cooked food of the atmosphere.

*The New-York Farmer*, the publication of which was suspended last fall, has been revived, and the editors give an assurance that it will continue to be published as formerly.

### Potato Sugar.

We give the following as supplementary to the remarks in our last, on the conversion of potato starch into sugar. The first extract is from Saussure, and the other from Silliman's Journal of Jan. 1832. Taken together they afford an answer to the inquiries of our correspondent. The quantity of sulphuric acid employed does not seem to be material, according to Saussure.

"As starch boiled in water with sulphuric acid *and thereby changed into sugar*, increases in weight, without uniting with any sulphuric acid, or gas, or forming any gas, we are under the necessity of ascribing the change wholly to the fixation or solidification of water. Hence we must conclude that starch sugar is nothing else than a combination of water with starch in a solid state.—The sulphuric acid is not decomposed nor united with the starch as a constituent.

"A bushel of potatoes (see Silliman's Journal,) weighs about 60 lbs., and gives eight pounds of pure, fine dry starch. This amount of starch will make five pints of sugar, of the weight of nearly 12 lbs. to the gallon, equal to seven pounds and a half to the bushel of potatoes, or a little less than a pound of sugar to a pound of starch. The sugar is not so sweet as the Muscovado sugar, nor is it actually so sweet as its taste would indicate.

"This sugar may be used for all domestic purposes. It ferments with great liveliness and spirit, when made into beer, yielding a healthful and delicious beverage, and on distillation a fine cider-brandy flavored spirit.—It would, however, be most useful in making sweetmeats, and may be used upon the table instead of honey, for which it is a good substitute. It has already become a favorite with most people who are acquainted with it. Its taste is that of a delicious sweet, and as an article of diet is unquestionably more healthful, and less oppressive to the stomach, than any other sweet ever used."

*State policy.*—Maine has paid to her farmers more than $76,000 as a bounty upon wheat raised by them last year. Thus Maine, with a population of less than 400,000, gives 76,000 dollars, annually from her public treasury, directly in aid of agriculture. New-York, with a population five times as large as Maine, gives —*nothing!!* What WILL she give!

### Correspondence Condensed, &c.

CUTTING UP CORN.

"*Baltimore, March* 1, 1838.

"While I have the pen in my hand, will you permit me to suggest, that you may confer an essential service on the southern portion of your subscribers, by some observations on the advantages of *cutting up the corn*, instead of *topping* it, as now generally practised here.

"H. M. F."

Thirty years ago we read a communication of John Nicholas, then we believe of Virginia, on the advantages of *cutting up*, instead of *topping*, Indian corn. These advantages appeared to us so palpable, that in the noviciate of our farming operations, nineteen years ago, we reduced it to practice; and although we have since adopted occasionally the topping system, by way of comparison, we have made it our general practice to *cut up* the crop ever since. We are convinced, from our long experience, that it possesses over the old mode of topping, the following advantages:

1. *It saves labor.* With proper implements, which every farm can furnish without expense, two smart men will cut up and stock two acres in a day. They cannot top more than one acre, and the tops are afterwards to be bound, stooked, and backed off the field, or left to be bleached till the corn is harvested, when they have lost half their value. A hill is gathered with a blow in cutting up; in topping, a cut must be made upon every stock.

2. *It adds to the grain crop.* We have satisfied ourselves, by careful experiments, that we gain six bushels of corn per acre, by cutting up, above what we obtain by topping our corn. And we account for it on the well known principles in vegetable physiology, that all the nutriment of plants must be elaborated, or prepared, in the leaves, and that this elaborated sap, or prepared food, *descends*—consequently, that when the leaves *above* the corn are taken off, by topping, the grain can gain no further nutriment, or accession of growth; and that when the crop is cut up, and stooked, the grain does continue to obtain nutriment, and accession of growth, for some days, from the descending, or elaborated sap, with which the succulent stems are abundantly charged. The leaves also continue their elaborating process for some days after the corn is cut.

3. *It augments the cattle fodder, and preserves its nutrient properties.* Cut and well stooked, neither the grain nor the forage are liable to be seriously injured by the weather, even if left in the field late. If topped, the tops must be exposed to the deteriorating influence of rains, wind and sun, till they are dry enough to bind, which diminishes their value. If cut up, the whole of the stocks are converted into forage. If topped, but a small part becomes useful. And if the butts are fed in the cattle yards, they imbibe additional fertilizing properties from the urine and liquids which abound there, and which are lost if there is no litter to absorb them. Hence,

*In the fourth place*, it gives more food to the crops, as well as to the cattle, by saving that which otherwise is often lost to the farm. And,

*Finally*, cutting up has this important advantage, at least in the north—it secures the crop, both grain and forage, from damage from early autumnal frosts—for after the grain is cut and stooked, it is not liable to injury from their occurrence. We may add, that the ground may be cleared two or three weeks earlier, for a winter crop, where it is desirable to sow in autumn.

From the general accounts we have of southern products in corn, we apprehend, that if fewer acres were planted, and these better manured, the labor would be less, and the products, or at least the profits, greater than they are at present—always excepting our friend Reybold, of Delaware, whose example is worthy of all commendation.

*Spring Rye.*—W. A. of Baltimore county, has our opinion, that spring rye is not worth his notice. We consider it the poorest crop a farmer can cultivate, and wherever it is seen growing, it betokens bad husbandry. Seed may be obtained from farmers at about a dollar a bushel.

"*A Young Farmer of Suffolk*" is informed that we have had no experience in *caponizing* fowls, and that we have no authorities which enable us to answer his queries upon this subject. The wood to be preferred for *smoking hams*, &c. is green hickory, next green hard maple—corn cobs are good with these woods, or alone. The colour of the hams indicates when they are sufficiently smoked—they should be a deep russet brown.

SUGAR BEET SEED.

Sherman M'Lean, writes us from Royalton, N. Y. as follows: "I raised last summer about 400 bushels sugar beets, and not having the necessary apparatus to manufacture sugar, I have concluded to set out an acre or more for seed, if the prospect of selling the seed will warrant the undertaking. Will it be safe for me to do so?" Yes, if contracts are early made with seedsmen before supplies are ordered from Europe. Great quantities of seed, we doubt not, will be wanted. Prepare the ground well, leave intervals of three feet between the plants—let either all the sprouts grow, or reduce them to one or two, and support the seed stocks by stakes or poles.

*Swamp Muck.*—J. Winch, jr. of East Roxbury, Vt. writes us that he has an exhausted farm, which he is in a hurry to improve; that he has a large quantity of barn-yard dung, and an inexhaustible supply of swamp-muck, and he asks how he can apply them both to the best advantage to the coming crop. If the muck resembles leaf mould, as we infer from his letter, that is, if it is reduced to a powder, and devoid of ligneous and woody matters, he may mix it with profit with his barn-yard dung, in equal parts, as early as possible, and apply both together; or he may apply the muck to his grounds for small grains, or as a top-dressing to his grass lands. The fermentation of the manure in the soil will induce a decomposition of the vegetable matter in the muck. We advise Mr. Winch to take time by the fore-top—and as soon as his cattle yards are cleared, as they ought to be, in the spring, to bed his yards from six to twelve inches with muck, as a source of fertility in 1839; and further, to grade his yards so that the liquids may not run off, but may be absorbed by the muck and litter to be deposited in them.

*Hedges, &c.*—G. G. Cotton, who writes us from Homer, Ill. will find his queries in regard to hedges answered in our late numbers. The indigenous crab and wild plum are probably the best plants he can employ, and the sod fence he proposes to build around his 400 acre prairie lot, will constitute an excellent protection for the young hedge. But if he begins, he must not look back—he must persevere, or his labor will be lost. A belt of forest wood, on the bleak side of his lot, would give beauty, shelter, and ultimately profit. We can say nothing, from personal knowledge, of the grain cutting machines, propelled by horse-power, not having seen such in operation.

SPREADING LIME.

Samuel Howard, of Perry, inquires if there is any mode of spreading lime, at the rate of twenty bushels an acre, other than that of doing it with the hands? A machine for scattering lime or gypsum, has been invented by Julius Hatch, of Great Bend, Pennsylvania, which our neighbor Bement has tried, and highly approves of. We think lime might be spread very well, at the rate of twenty bushels an acre, with a shovel, the man standing in, or at the tail of a cart containing it, and passing back and forward through the field.

Abel Curtis, of Laurel, Vt. wishes to know the cheapest means of raising water 100 to 150 feet. There is no *cheap* process of doing this. It can only be done by wind, water, steam, or animal power. Inquire at the Fair Mount Philadelphia Water Works.

Eli Stephenson, of Cabotsville, Mass. would advertise the public, that he has a fine three year old Short Horned Durham bull for sale.

*Poll-evil.*—John D. Rodney, of Lewis, Del. asks for directions to cure the poll-evil. Willich directs, that *to disperse the swelling*, the part be bathed with hot vinegar; and that if the hair be fretted off, and a discharge ooze through the skin, a fomentation, prepared with two parts of vinegar and one of spirits of wine, will be more proper. Should great inflammation ensue, bleed, apply poultices of bread, milk and elder flowers, and give physic. To *discuss tumors*, Mr. Clark recommends, that as soon as matter is preceived to fluctuate in the part affected, to introduce a large seton-needle, armed with a cord, at the upper end of the swelling, and bring it out under the lower part of it; from which orifice the pus will speedily discharge itself; and in a few weeks the wound will be perfectly healed, without leaving any scar or blemish, or the least trace of the disorder.

*Foul in the foot.*—L. B. of Wayne county asks how this should be treated? We give the answer from Lawrence on Cattle.

"In case of any fissures or cracks, attended with heat, wash them with strong lather, and apply oil of turpentine, or tar and brandy, and keep the feet dry until healed. When the claws appear distended and inflamed, and the cracks have an offensive discharge, scrape with a knife and cleanse the parts, dress with Egyptian honey and oil of turpentine, hot, butter of antimony, or any of the corrosive waters in common use. Should the foul be neglected until it becomes indurated or bony, extirpation with the knife will become necessary. But nothing is so necessary towards the cure, as keeping the parts perfectly clean and dry, for want of the resolution and care to do which effectually, many patients are never thoroughly cured.

"*Water for foul in the foot.*—Strong solution of blue vitriol and alum in water. If required very powerful, the acid of vitriol one ounce, corrosive sublimate four drams; or an ointment made from the above, mixed with honey and verdigris, applied on pledges of tow."

We can give no directions for the cure of the *hoof-ail*, as its symptoms are described. It seems to be a disease peculiar to our country. All we can do, is to suggest the preventives of keeping the animals dry, and well, and of giving them daily salt and roots. Can any of our correspondents cite a case of mortality among cattle which have had a daily allowance of roots and salt, and been protected from storms?

*Rotation of Crops.*—We have been desired, by a respectable correspondent, to give a list of a course of crops adapted to each of the leading divisions of our soils. The task of doing this, on a scale adapted to the circulation of the Cultivator, would be one of some difficulty. We shall offer some general remarks upon this subject in our essay upon The New Husbandry, and may afterwards enlarge upon it, so far as our personal knowledge will justify. In the mean time we would accept it as a particular favor, and the public would no doubt be greatly benefitted, if some gentleman in the south, or south-west, would furnish us with the courses adapted to those sections of our country.

"*A Young Farmer*" writes us from Salisbury for advice, whether he shall put his corn crop upon an old and very stiff-sodded meadow, not yet ploughed, or upon a two year old clover ley? We answer the latter. Let the long manure be taken out, spread, and ploughed under, and the ground well harrowed and planted, in as little time as practicable, from the 5th to the 15th of May. The old meadow may be turned over, and sown with oats, or oats or peas, this spring, and will be in good condition for long manure and corn next year. The fear is, that the vegetable matter of the

* According to an experiment stated by Sir John Sinclair, an old man was appointed to discover how often some cattle, consuming chaff and straw on a farm, went to the watering-trough in a short winter's day, and that he might not be confused in the execution of his orders, one particular bullock was pointed out for his report; according to which, *he drank eight times in the course of the day*, and the man was convinced that the rest of the cattle drank as often as the one fixed on. Now, twice a day is the most in which they generally get water; and they are not able, at one or two opportunities, to drink a sufficient quantity. Husb. of Scotland, p. 100.

tough sod will not decompose in time to feed the corn crop this year.

SHEEP HUSBANDRY.

Samuel Manning, of Weston, Vt. will find most of his queries on this subject satisfactorily answered in our last number, in the extract from Daubenton, and the report of Mr. Randall to the State Society. In crossing breeds, with a view of multiplying good points, it is a general rule to take the male from the smaller, and the female from the larger breed. The markets are too fluctuating to quote, and prices vary greatly according to the purity of blood and beauty of the individual, often fifty per cent. The Hampshire among us are a variety of the South Down. We do not know of any Ayreshire cattle in the market. It is impracticable to obtain the statistical information our correspondent asks for. An excellent work on sheep, written by Chancellor Livingston, was published some years ago, at the expense of the state, and may be had of the Messrs. Skinners, booksellers, in this city.

*To restore worn-out lands to fertility.*—B. S. Patton, who dates at Clarksville, and who represents himself as being young in farming, solicits our advice. We possess no universal panacea; and can only apprise Mr. Patton, as we do all others like circumstanced, that exhausted lands can only be renovated by a course of management the reverse of that which has made them sterile; and that abundant instructions in the *modus operandi* of imparting, or perpetuating fertility, may be found in the columns of the Cultivator, and particularly in our March number. Men young in farming, as well as those young in life, must learn to depend for success, principally, on their individual efforts—on their mental as well as physical powers. Husbandry is a business in which a man may learn as long as he lives; and in which, the more the learns, the more he finds to learn.

*Suckering Corn.*—W. Gatwood, of Strasburgh, asks if the Dutton corn should be succored? We are not in the habit of succoring our corn. We have done it by way of experiment, without apparent improvement in the crop, and at a loss of time and forage. If the suckers are to be taken off, we should prefer cutting them at the surface to tearing them from the stock. The opinion has been given, and we think well sustained, that the succors perform an important office—that the pollen of their tassels impregnates the male blossoms after that of the main stocks, which developes earlier, has been blown or fallen off—so that, although they do not increase the ears, they increase the corn, by causing the ears to fill out to the extremity of the cob.

*Beet Sugar.*—We possess no data which enable us to answer satisfactorily the queries of J. Tomlinson, of Le Roy, upon this subject. We refer him to our March number, and give him the assurance, that he shall be enlightened further in the matter as soon as it is in our power to gratify him.

ITALIAN WHEAT.

The testimonies in favor of this grain multiply on our hands, although they were before amply sufficient to establish its high reputation.

Levi Hopkins, of Sennet, Cayuga, from six bushels of seed, sown on the 10th April last, on five acres of sandy land, threshed and cleaned up 202 bushels. The sample sent us is beautiful. Mr. H. had sixteen acres in winter wheat adjoining, which was much injured by rust, and produced less than the five acres of Italian.

A. B. Clark, of New-Hartford, Oneida, has raised the Italian wheat three years, twice successively upon the same field, without manure, (bad husbandry,) and obtained the first season twenty-five, and in the latter thirty bushels per acre. Mr. Clark also sowed three acres of Siberian on soil similar to that sown with Italian, and the product was twenty bushels to the acre. These facts are sent us by J. H. of Oneida, who adds, that "a great deal of the wheat lately taken to Albany, and called Italian, is not genuine."

*Hams*—A correspondent in New-Jersey asks how we keep hams in summer? We have employed various modes, but have not always been successful until we adopted that of covering the ham tight with crash or other coarse cloth, and then covering the cloth a with substantial coat of whitewash. This has always been effectual. Our correspondent notifies us of an error we committed in our directions for making the Knickerbocker pickle, in p. 187, vol. iv.: There should be 9 lbs. salt, and 3 oz. salt patre to *six* gallons of water.

"*A Subscriber*," who dates at New-York, is informed, that it would not be dealing fairly with our old patrons, to republish articles from our back volumes. He will find the information he desires in vols. 1, 2 and 3, which he can procure of our agents in his city.

Our Westboro' correspondent is informed, that "by 50 to 100 bushels of lime to the acre," we mean lime directly from the kiln—unslacked lime.

"Will you be so good as to let me know your opinion of the Indian buckwheat spoken so highly of by Gov. Hill, and to have a bushel forwarded to me, or direct me where it can be had? JOHN H. KING."

This Indian buckwheat we presume to be the same as is known under the names of Indian wheat, Polish buckwheat, and Siberian buckwheat, or properly, according to Loudon, *Beech* wheat, from its resemblance to beech mast, (*Poligonum Tartaricum.*) In some places it has the reputation of being superior to the common variety, but after cultivating it three seasons, we were not aware of its marked superiority. Its habit is rather dwarfish, blossoms green, and seed small. We like the flavor of the cooked flour better than that of common buckwheat. For a green crop, to be ploughed under, we think the old kind is to be preferred. It is out of our power, at present, to send the seed to Mr. K. not knowing where it can be procured. Von Thäer, who tried it repeatedly at the Prussian Agricultural School, found its produce quite insignificant.

*Pumpkin seed oil.*—N. Carter, of Painesville, O. writes us, that he has extracted five gallons of oil from ten bushels of pumpkin seeds; and he thinks if any plan can be devised to take off the hull, the business may be profitable. Mr. C. asks if there is any machine for effecting this operation? We do not know that there is.

W. Spencer, of Hadlyme, Ct. writes—"The last season I enlarged my turnip yard to half an acre, from which I got 443 bushels. I sowed the 7th July, in drills twenty inches apart one way, and about nine inches the other."

In reply to Mr. Spencer's queries,—what is the value of the ruta baga in comparison with potatoes for fattening animals? and what is the best way to keep them from heating and rotting? From comparative experiments it has been found, that the Swedish turnip is at least equal to the potato in fattening beef. To keep turnips from heating and rotting, they should be dry before they are housed or pitted—should not be stored in large masses—and should have ventilation. They are not liable to heat in cellars, which are capacious, and from which the rarified air can escape. Pits in the field should not exceed three feet in breadth, though they may be of any length. The roots should be raised above the surface in the form of a roof; and after the earth has been thrown upon them, holes should be made in the ridge, at intervals of a yard, to let off the heated air. Wisps of straw may be placed in these holes, that the impure air may escape.

*Dextrine.*—P. C. Spafford, of Westminster, will find his query in part answered, in regard to dextrine, in p. 78, last vol. of Cultivator.

"FAR WEST."

Within our recollection this term meant Utica, or Pittsburgh—but population has since been travelling west, till "far west" now at least means west of the Mississippi. We have a letter before us, inclosing five dollars for the Cultivator, dated "Far West, Missouri," fifteen hundred miles west of our longitude. We subjoin an extract, which will serve to give some idea of the vast extent of our unimproved territory, and of its inexhaustible recourses. "Far west," will soon mean, the Rocky Mountains—the valley of the Columbia River—the Pacific Ocean.

"The resources of the 'vast ocean of prairies' in the far west," says our correspondent, "are untold, unsung, unwritten, and if we should philosophize a little, or ask the geologist to search for something in these *everlasting fields*, it might bring forth some fresh blessing from the 'treasures hid in the sand.' Our weeds yield rosin; an account of which I have never seen in print. Some of the weeds taste like white pine, and some like pitch pine. When the prairies are on fire, this material greatly increases the flame and the smoke, so that, as the prophet said, 'the land thereof becomes like burning pitch.' When millions of pitchy prairies are rolling up their massy columns of smoke, our eastern friends should be informed, that we are making 'smoky days,' or the 'Indian summer.'

"The prairies have many things peculiar to themselves, which, if published, would be instructive and amusing. The soil, the grass, the flowers, the animals, the fowls, the insects, the climate and the winds, are different from the wilderness, or the cultivated countries of the east. Our bees are wild, but generally rich; and our paroquets may be said to be 'green birds with brass heads.' The robin of the northern states frequently stays in the Missouri bottoms during the winter months, but is never seen in the summer."

☞ Several communications on hand will receive attention in our next.

## CORRESPONDENCE.

### On the Construction of Barns.

*Farmington, Con. February 9th,* 1838.

Judge BUEL,—Sir,—I am a subscriber to the Cultivator, and think much good will be effected by your labors; already within the circle of its influence is the spirit of inquiry aroused to the subject of improving our worn-out lands; and I think, too, our young men are turning their attention to their farms at home, with a view to render them more productive, rather than abandon them for the El Dorado of the west.

I was particularly gratified to notice your offer of a premium for the best plan of barn and stable adapted to common farmers. There is much and great need for improvement in this particular; the buildings in common use for the storing of hay and grain, and for the shelter of cattle, are any thing but convenient; indeed, convenience seems not to have been thought of in their origin. I have been waiting, in the expectation of seeing a plan presented by some of your correspondents, which would evidently be an improvement; one that might be a pattern barn for future builders; but as yet have none such. The two presented by Mr. Jewett and Mr. Johnson I think are objectionable.

The most expensive part of our buildings, and the least enduring, are the roofs; it is, therefore, a desideratum, to obtain the most space under a given amount of roof; the nearest approximation to that result, which we can obtain in our buildings, will probably be found in the square, with an elevation of the roof as far as is practicable with safety, and convenience of storing away fodder. With this principle for a guide, it has seemed to me that convenience and economy both would be obtained in a barn built on the following plan, viz: Length fifty-six feet; breadth forty-nine feet; heighth and length of posts twenty feet; space for floor through the centre; bays for hay and grain on each side of the floor; stables the whole width of the barn across each end, excepting a space for entrance, at the front end, which space may be a recess for storing the hay cart, or the doors may be placed flush with the outside of the building; the height of the stables to be barely sufficient for a man of ordinary height to stand erect, that all the space above may be obtained which is possible, and have the cattle stand comfortably; the loft over the floor to be so high as barely to admit the largest load under it, for the like reason; and if the floor is larger then necessary for threshing grain, the loft over the floor on the opposite end to the great doors, may be brought down to the level of the loft over the stables, which will leave room for the team hauling loads into the barn to pass under, and bring the front of the load close up to the loft.

The advantages of this plan are, saving the expense of mangers, and also one set of barn doors; greater convenience of feeding cattle; do. of stowing away hay and grain; a greater amount of space and more compact; a greater saving of waste room on and above the floor.

The slight draft of the plan I send you, has only one entrance and one set of barn doors; the cattle are to eat from the floor, consequently only requiring a manger pole, and boarded from them to the floor; the greatest distance to pass to convey food to the stock is eighteen feet from the barn floor; the three feet spaces are for a passway to convey food, and for the cattle to eat from. I think it preferable for cattle to eat from the floor, because it is the natural position; because you can better feed to them the sweepings and seed of the hay-mow; and because it is a saving of hay, in that the cattle will not so readily scatter it under their feet; the space can be more readily cleaned of the refuse than from a manger. The hay and grain can also, with much less labor, be deposited in two bays, the load standing in the centre, than one large one, on one side only. It is also a convenience to have two, one for grain and one for hay; no more waste space for the floor than is absolutely necessary. I have said thirteen feet width of floor; this is not too wide for convenience of threshing and covering of grain; nor is it too wide for the convenience of hauling in loads. The end opposite the entrance may be occupied by a low loft, which could not be done were there an entrance at each end of the floor. The team hauling in loads can be learned to back out the cart with the same facility they would pass out forward; and if they are taken from the load in the barn, they can pass out by the side of the load singly, or pass through the alley, by a door at the end. The space under the low loft will be the proper place for a fanning-mill, cutting box and tub for mixing straw and grain; and under this part of the floor may be placed the cellar for roots, so there will be no loss of room.

The objection to Mr. Jewett's plans, are needless expense in manger, or rather necessary in his arrangement of the stable, but needless in a different location; also in one set of barn doors, and double the length of plan that is needful; also, waste of space consequent on the length of plan, too long for width. The expense of inclosing the yard with buildings, is unnecessary; a yard should always have a southern or eastern exposure for the benefit of the sun.

The objection to Mr. Johnson's plan are, that the bay is too large; it will be inconvenient storing away the hay, and a consequent loss of labor; and the remedy he proposes is to unload from the outside; but this is not to be done beyond a certain height, within the reach of the hand unloading, consequently not but a partial remedy. A greater distance to supply the stock with food in the large barn; distance from floor thirty-six feet, in the adjoining stable or barn forty feet; larger proportion of roof for the same amount of space; large barn too long for width. The expense of sinks I should think unnecessary, (I suppose his object is to save the liquid from the cattle.) I think this is better saved by a liberal supply of litter, and changed daily as its becomes saturated.

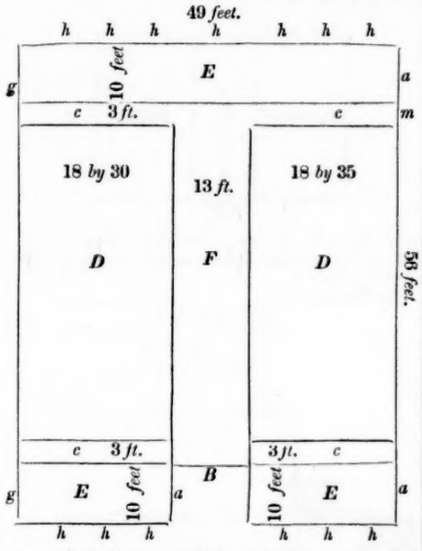
The stanchions for securing cattle is a rough way, and perhaps more cattle may be stabled in the same space than in any other way; but they cannot lie as comfortably, and therefore I much prefer securing with a rope tied about the head.

I have thrown out these thoughts, sir, not in the belief that this plan is the best that can be devised, but

in the hope that the attention of some one who has bestowed more thought on this subject than I have done, may favor us with his views through the Cultivator, and that the result may be a plan superior to any now in use, both as regards economy in space, utility and convenience.

One word as regards long or unfermented manure; let the advocates of fermented or rotted manure make a careful trial of equal quantities, and mark the result; my belief is, that at least one moiety of the fermented is lost in decomposition above ground.

Respectfully your obedient servant,
E. COWLES.




*a, a, a,* stable doors; *B,* barn door; *c, c, c, c,* spaces for feeding cattle, and in the place of mangers; *D, D,* bays for hay and grain; *E, E, E,* stables; *F,* barn floor; *g, g,* windows; *h, h, h, h, h, h, h, h, h, h, h, h, h, h,* ventilations for stable and throwing out manure; *m,* door at the entrance of space or alley.

### Smut in Wheat.

Judge BUEL,—It has long been a desideratum to find a preventive of smut in the wheat crop; this year's experience has, in many instances, proven that *brining* and *liming*, as suggested in the "Cultivator," is not a certain preventive; at least it is certain that several farmers in this neighborhood, who prepared their seed wheat by soaking in brine, and adding as much lime as would adhere to it, found the crop smutty at harvest. It seems to be generally believed, that if wheat is *harrowed in* while it *rains* or *snows*, it will prove a smutty crop; experience has confirmed the fact in several cases this season, that have come to my knowledge. May not the secret after all be, that after duly prepared, the wheat be *dry* when sown and got in? Capt. Daniel Green, of this town, prepared wheat as above; about half of the seed after prepared, was kept till *quite dry*, before sown; the other moiety was sown while *still moist;* the latter when harvested was smutty, the other wholly free of it.

Your obdt. J. HATHAWAY.
*Rome, January,* 1838.

REMARKS.—Notwithstanding these exceptions, the rule, that salt and lime are a preventive of smut, holds good, and can be attested to by thousands. We suspect either that the pickle was weak, the lime effete, or the steep not kept long enough upon the seed. Smut is a parasite. Its seeds adhere to the kernel. Salt and lime destroy their vitality. It is *possible,* that by sowing in wet weather, the salts may be so abstracted, as to render them ineffectual in killing the seed of the smut. But seed should be always harrowed in when neither rain nor snow are falling. The seed of the smut might have been in the soil, or in the bag in which the moist wheat was taken to the field; and if the former, the rain may have contributed to bring it in contact with some of the seed.—*Conductor.*

### Poultry House.

*Orange co. Va. Willow Grove, Jan. 18th,* 1838.

DEAR SIR,—I have enclosed you a drawing of a poultry house, and as you justly remarked in your last number of vol. 4, of the Cultivator, although, superficially viewed, of comparative insignificance, it is certainly a branch of rural economy, which may be made to contribute largely to the economy and comfort of every family. And should you think it worth a place in your valuable paper, you may have it inserted.

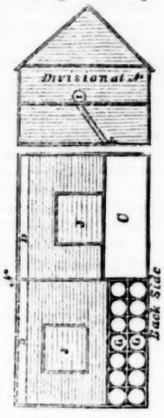
Many of your subscribers in this section of country would be glad if you would have a drawing of the most approved ox yoke, with directions how to have it made and ironed on the best plan.

Respectfully yours, &c. W. D. CLARK.

*Explanation of the Cuts.*

A, the door; B, the entrance for the fowls; C, C, C, the openings underneath the lattice or mitered

[Fig. No. 21.] [Fig. No. 22.]

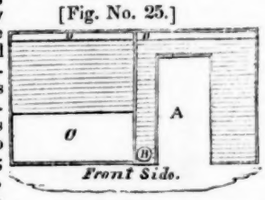



[Fig. No. 23.]

[Fig. No. 24.]

floor where the fowls roost; D, six inch opening to admit air; E, the ground floor made of dirt, elevated above the surface one foot, with boxes for the poultry to lay and set in, or more properly a room for the poultry to set and lay in, to be increased with tiers as they may be required; F, steps for poultry to go to room to roost; G, G, G, G, G, G, boxes for nest; H, lattice or mitered floor for the litter from poultry to fall through, and room for the poultry to roost in; (i,) a round hole one foot in diamater, for fowls to pass to roost; J, J, J, lattice windows or blinds, three feet wide, three feet six inches deep. I have used the poultry house, of which the above drawing is a representation, for about eight years, and can testify that it is preferable to any known in this section of country, and many of my neighbors have thrown away their old houses, and have built after my plan. The roost for the fowls should be often renewed, and always of sassafras, as the smell of that wood is deleterious to the vermin on poultry. The floor in the setting room should be kept sprinkled with lime, and the litter from under the house taken away weekly.

[Fig. No. 25.]




### Weight of Dutton Corn, in Indiana.

RESPECTED FRIEND,—Having been desirous of ascertaining the best corn for the middle western states, I called last fall on J. M'Donald, of Allen county, Ia. to examine his Buel, or Dutton corn, and saw him shell and weigh a bushel. The weight was 69 pounds, and the product of an acre about 45 bushels. This is decidedly the heaviest grain that I have ever seen.

J. BUEL. JUSTUS WRIGHT.
*2d Mo.* 26, 1838.

### Sheep-Husbandry.

*Weybridge, Vt. March,* 1838.

SIR,—As much labor is bestowed in raising of wool within the circulation of your valuable paper, it is quite proper its patrons and wool-growers should now and then note a hint on sheep husbandry.

I do not expect in this communication to give general information to all interested in the subject, but if I have not learned some of the first rules of a good shepherd, it is not for the want of an opportunity.

I frequently hear it observed that sheep will degenerate where they have for a length of time been bred and kept on the same farm. To my satisfaction I have seen this proved otherwise.

My father was first in obtaining a flock of one of five hundred in this part of the state, and this flock and increase was summered on the same pastures successively forty-five years without shifting the ewes, and no sheep more robust were reared in this section of country; however, there was no breeding in-and-in, bucks were changed every year or two.

No animal is more nice in the selection of its food than sheep, and by giving them a sufficient choice, and free access to water throughout the year, the disorder generally attributed, and so fatal to sheep, called, "grub in the head," would rarely appear in our flocks.

Thin sheep in the month of July and August will take sudden colds, and viscid matter discharge at the nose within two hours after being exposed to rains or cold winds; in this phlegm the grub-fly deposits his eggs, at the same instant the sheep may be seen to cast up its head, and draw the larvae into the nostril, where it becomes a grub. Those in good condition will throw them out in the spring without any material damage. Sheep in good condition also may be killed by the grub, where full feed is not at all times allowed them to form the proper juices, which are secreted for their support; they will immediately gnaw into the brain, which terminates in death.—The shepherd that gives his flock sufficient forage, water, and exercise, will rarely be frequented by any raging distemper, except the scab and a foot rot, which spread by innoculation.

No animal needs water more than sheep; when fed on dry hay, without water, they do not receive a supply of the gastrick juices to promote the digestion in the stomach, soon loose their appetite, and are thrown into a fever.

Those in high condition will do tolerably well on snow, but to oblige ordinary and poor sheep to melt snow would be as proper as for a weakly person to resort to the same restorative to quench thirst. To confine them in small yards through the winter brings on a fever and general debility, which would be obviated by giving them exercise; one very essential point.

If they cannot otherwise be accommodated than in small yards, I would recommend a mound to be raised across the middle of it, so high that when they run over, those on the opposite side cannot be seen, which stimulates them to follow, one after another over this ridge,—when if the yard was level they would scarce move out of their tracks.

Respecting the rearing of lambs, I do fully agree with your correspondent, Mr. Daniel S. Curtis, in his communication in the 2d volume, 7th page.

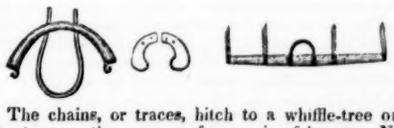
Yours truly, SOLOMON W. JEWETT.
J. BUEL.

### Yokes for Oxen.

*Juliustown, Burlington co, N. J. Jan.* 9, 1838.

SIR,—In a retired place, I occasionally come across quotations from your valuable paper, and endeavored to get it; but it is not a month since I succeeded in obtaining the fourth volume of ten numbers by the mail. An article in the last number on "Working of Oxen," put me upon recommending through your paper, a mode of training and working them, which I have practised with unequivocal advantage for many years: it is, to give to each beast a separate yoke, with chains, or traces with a few links at the head, to hitch to a hook, two of which should be hung in an eye at each end of the yoke, as per figure 26.

[Fig. No. 26.] [Fig. No. 28.] [Fig. No. 27.]



The chains, or traces, hitch to a whiffle-tree on the tongue, the same as for a pair of horses. No back-strap is necessary; and to loose the ox requires only to unhook the traces at the yoke, and throw them back on the tongue or cart.

For sustaining the tongue of the wagon or cart, figure 27, gives the form of a supporter, with four chains of four or five links, which attach to the forward hook on the ends of the yoke. The tongue, and the staple to steady it, must be *on the top* of this supporter, where a good iron plate for it to rest on, and to wear against the hold-back, will add strength and durability. Bits for the mouth, with straps to buckle behind the horns, and a coupling strap, are necessary; but *by no means* put blinds.

Oxen, bulls, or cows, trained to harness of the above description, may be directed in their course with lines, full as well as horses; singly to take a plough, or cart, for which there should be a separate yoke with tugs, and I am of opinion, *founded on experience,* will perform from ten to fifteen per cent more work, than in the old method of a double yoke. This gives them, when vicious, or worried a little, the power of quarrelling, by crowding or hauling; singly yoked, they are accommodated to the road, be it wide or narrow, sandy or irregular; they can straddle a log or hole without confinement to each other; walk freer, and consequently faster, and with less fatigue.

Cattle designed for work should be bridled early, and led about kindly; a small yoke should be put on them at a stage when they can be firmly managed by a rope attached to the bridle bit, which, with its straps, should be always strong; thus they may be rendered exceedingly tractable, much more so than horses are generally.

The *principal* use of oxen, (and bulls, which are stronger and hardier, and by early training are also made more peaceable,) in the heavy labors of agricul-

ture and teaming, instead of horses, would result in very important advantages, both to the farmer and community at large. They should always be shod when worked on the road constantly, or in frosty weather. See figure 28.

I have heard that there are modes of bringing the draft on the head instead of the shoulders, practised in the Spanish provinces, the particulars of which I should gladly become acquainted with.

Your obt. sert. DAVID ALLINSON.

### Hints to those who Write for Instruction.

That any information to be valuable, must be based upon experience, needs scarce an argument in its proof; nor is the assertion less in accordance with truth, that the value of any information must mainly depend upon the manner in which such information is conveyed. While facts are to be stated, it is essential that all the facts be brought forward. In treating of subjects connected with agriculture more especially is the above the case; the nature of the soil, the state of the climate, whether humid or dry, the average range of the thermometer, both perhaps in a great measure influenced by the remoteness from or proximity to the ocean or our great inland lakes, should be particularly noted. Thus would each be enabled to cull from the mass of facts presented by "The Cultivator," such as are best adapted to his individual case. How often do we meet with accounts of great crops, the beauty of a particular mode of culture, yet deficient in the essential points we have enumerated? To what possible advantage can they be applied, or rather of what evil may they not be productive, more especially among that class who, adopting agriculture late in life, either for profit or amusement, are deficient in that practical knowledge, which an early devotion to the subject can alone bestow.—On the other hand, had the writers been more particular in their narration, he had been ignorant indeed who had failed, since such failure must suppose an ignorance of the nature of his own soil, and other attendant circumstances, the knowledge of which, though more easily acquired, are by no means less necessary.

That the value of different articles for manure, depends upon the nature of the soil to which they may be applied, is a fact which, though readily conceded, appears to be but little attended to, at least if we may judge from practical essays on husbandry. As a proof of this, let us take the article of gypsum, or plaster as it is usually termed; no article can come more highly recommended, yet where can we find an account of the soils best adapted for its employment, the proper season for spreading the same, or the tests of its quality, (and no substance as a manure, differs more) whether it should be sown immediately after it is ground, or whether it will take no harm from remaining sometime before it is given to the earth. As an article of manure for certain localities its value can scarcely be estimated too highly, while we can imagine others where its employment, if not directly prejudicial, would at least be productive of no benefit; truly he would confer no small benefit on his country who would treat of this subject more at large.*

The article which appeared in a late number of "The Cultivator," on "new method of tillage," deserves serious consideration; it were the height of folly truly, to hold on the old, with no better reason than because it is old, and equally so to adopt, merely for its novelty, the new. There are some lands which require frequent ploughing, on these the rotation of crops is no doubt the proper system to be pursued, but are there not others which will pay better for being undisturbed? I trust the article I have alluded to, may elicit discussion on the subject, and thus give a new value to the pages of "The Cultivator." T.

### Horn-ail.

Friend J. Buel,—Thinking the public might be benefitted by the following, I am induced to offer it for insertion in thy columns, viz: A cure for the hollow horn, or hollow head, in cattle. In cases of this disease, I have always resorted to the common practice of boring the horns, until one of my cows, without horns, was so diseased; in which case I took one half pint of good vinegar, two table-spoonsfuls of common salt, one tea-spoonful of pepper, and mixed them well together; the solution so compounded I poured into her ear, holding her head to one side, in order to keep her ear turned up, for the space of one or two minutes; then, after applying the same to the other ear, in the same manner, I turned her loose, and she is my milch cow this winter, it being five or six years since she was so diseased. Others of my neighbors have, in similar cases, resorted to the same method, always proving effectual. JOSEPH COPE.

*E. Fairfield, Ohio*, 1838.

*Chaptal's remarks on this subject are not without merit, yet I am inclined to the belief that his opinion as to its universal applicability is carried too far, while the quantity recommended by him to the acre, is by one half, at least, too great.

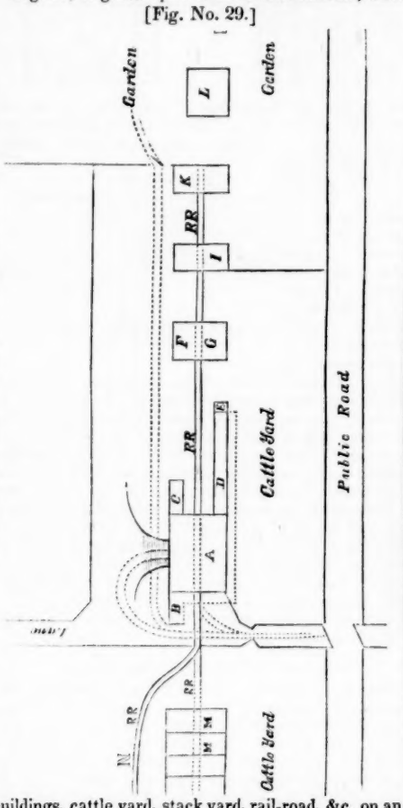
### Pennsylvania Barn, and Out-buildings.

Jesse Buel, Esq.—In No. 1, Vol. IV. of the Cultivator is an invitation for farming information, by the offer of premiums; this I was glad to see, not that I expected to obtain any of them, but that they wou'd elicit information that would be valuable generally, and to me particularly, in planning farm buildings.

I possess a farm of two hundred and fifty acres, about half wood land, the other half cleared and tillable, on which, if all goes well, will be required additional buildings, nearly all that should be on a well improved farm. I have a central situation, with a very suitable slope to the south, such as is desirable and mostly sought by the farmers in this state. I have so far matured my plans as to make drawings, subject, nevertheless, to such improvements as I can make in them from what is yet to come in the Cultivator, and my further observation. With the view of contributing to the Cultivator my mite, (if a mite it be,) I have made the inclosed drawings; they are rough, but perhaps they may be understood.

Fig. 29, is ground plot of the whole concern, farm

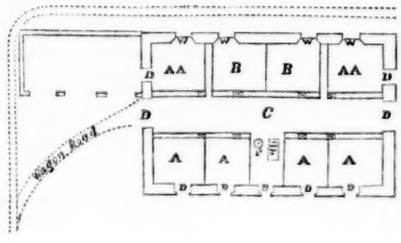
[Fig. No. 29.]




buildings, cattle yard, stack yard, rail-road, &c. on an extended scale. I purpose beginning with the barn, (Dutchman like; I live among them, and admire their barn economy.) A, barn with shed at one end and in front; B, wagon shed; C, store house for farm tools not in use; D, range of cattle sheds; E, poultry house; F, G, sheep and hog house; I, granary; K, boiling and smoke house, with winter and rainy weather work shop over it; L, dwelling; M, M, additional cattle sheds, or houses and yard in front; N, stack yard; R, R, rail-road through the whole line of buildings, (except the dwelling,) and a branch through the stack yard, when wanted and if the ground suits, (it does with me;) ·-·-·-·-·-· dotted lines wagon roads for access to the back of all the buildings, and to the threshing floor in the barn.

Fig. 30, ground story of stabling, &c. A, stables;

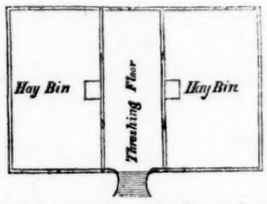
[Fig. No. 30.]




A, A, other stables, or they may be dug out for cellars and bins for roots; B, bins and cellars extending under part of the entry within the dotted lines, to represent walls; C, entry with one door large enough to drive a wagon into to unload, or to load a wagon in for the market without risk of freezing in winter; D, doors; W, windows on the back side, with double sash to keep out the frost, and for light in the entry, also to fill bins; P, well with a pump; H, P, horse-power for working of threshing or any other kind of machinery above.

Fig. 31, represents the threshing floor and chaff

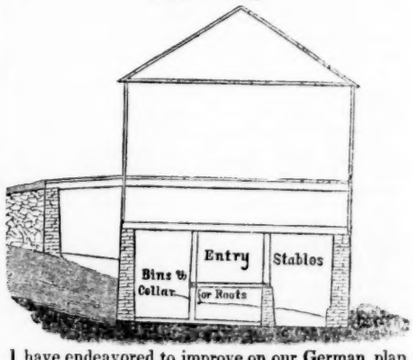
[Fig. No. 31.]




room under it; access to the latter from the road back of the barn and under the bridge leading to the threshing floor.

Fig. 32, elevation.

[Fig. No. 32.]




I have endeavored to improve on our German plan of the stable story, believing that the cost of the bridge, to the threshing floor, and the shed outside in front will be more than compensated by the room gained in the stable story for roots. The barn is all that I have undertaken to shew the inside of. All the buildings may be more or less convenient and expensive according to the proprietor's purse and inclination, (perhaps I may hereafter say more about some of them.)

As rail-roads are the order of the day, and as my ground is nearly level on a proper line for the front of the buildings, parallel with the public road, I have introduced one in my drawings through the centre of all the buildings, (except the dwelling,) to make transportation convenient from one to the other; the floor of the barn on which the car will run may be without rails, instead of which give the wheels of the car a face on the flang. I have contemplated constructing the car with a simple platform, so that we can place a steam box on it with the feed to be cooked in it, and take it on the rail-road to the boiling house, introduce a pipe from the boiler to cook by steam; when cooked, take it on the rail-way to any or all the buildings wherever they are to be fed; or, place on the car a light crib-work, (shelvings they are called with us,) for hay or straw from one place to another. One man can conveniently move on the rail-road half a ton weight. (Of the car more hereafter if desirable.)

From the accounts published in the Cultivator and others that I have read, root culture is extending, seemingly very profitable. My drawing embraces a cellar and bins that would hold about four thousand bushels, without obstructing the light, so placed that access can be had to them in freezing weather without danger; our climate at times is very cold and changeable, and we must provide against frost. My farm is about five miles from a good cash market for all my surplus; and if potatoes or other roots are to go to market in the winter, it would be very convenient to back the wagon to the bins to load and secure them out of the frost, to be ready for an early morning start.

Under the stable floor is a space between the front wall and the cellar wall, which may be filled with sand to absorb the urine of the horses or cattle. Some years since I called to see a relation, a good farmer, found him at his barn throwing sand into his stable, to replace what he had taken away. If my recollection is correct, (and I believe it is,) he said that the

sand became good manure under the horses, and was well worth the trouble of renewing it at times; I do not recollect how often.

I have found in my various operations, that to have things well done by subordinates, we must make preparations convenient to do them well, and that is a part of my study in planning buildings.

L. S. PENN.

### New-Jersey Lands—Ruta Baga.

*Long Branch, N. J. March 1st, 1838.*

DEAR SIR,—I would like to call the attention of some of your readers to this section of country. It is a very improving one, and susceptible of the highest state of cultivation; it has a water communication with New-York city; is contiguous to the Atlantic ocean; abounds in marl of excellent quality; and, in my opinion, there are few places in which land could be more easily enriched, and at a cheaper rate. Farms can be bought here as yet very reasonably; and I cordially recommend all who are in search of a desirable place of residence, to come and look at Shrewsbury, Monmouth co. N. J. ere they settle themselves.

For the first time, last season, I tried half an acre in ruta baga turnips; and though the crop bears no comparison to those crops noticed in the February number of the Cultivator, yet I am so well pleased with the result, that the ensuing season I expect to sow one and a half acres, and would put in still more, but for the want of manure.

Yours respectfully, E. H. VANUXEM.

### Egyptian Wheat—Morus Multicaulus.

*New-Haven, March 1st, 1838.*

DEAR SIR,—I observe in yours and other agricultural papers, the Siberian and the Italian varieties of the Triticum estivum, but nothing said of the Triticum compositum, the Egyptian wheat. Experiments have been made by Mr. Horick, which prove that the fly will not feed on this wheat, though it will feed on every other variety of the estivum. Has this wheat been cultivated to any extent in this country, to ascertain its value for agricultural purposes? In the Gardener's Dictionary, edited by Prof. Martin, it is said that this wheat has been cultivated in several counties in England; but the only objection to it is, that the summers are too cold for it. From this fact, it is concluded, that it will be well adapted to our country. I have a sufficient quantity of the seed of this wheat to make a trial, which, if it should succeed, will be communicated to you.

I have made a series of experiments with the Morus multicaulus since 1832, with a view of determining its specific character. The result of which is, that it is only a variety of the Morus alba, produced by a high state of cultivation. I planted the seeds obtained from the multicaulus in 1833; some of those plants thus obtained, appeared like the common white mulberry; indeed, perfectly so. I then took some multicaulus plants, and put them in very poor sandy land uncultivated. The plants became hardy, of slow growth, and formed wood so as to resist the winter. It appears to me, that the high cultivation has given to the multicaulus the properties of an annual, at least to a certain extent.

Yours with esteem, ELI IVES.

### Spring Wheat—Barn Building.

DEAR SIR:—Spring wheat, sowed the 15th of May on my farm the past season, has escaped the weevel and proved a good crop, certainly thirty bushels per acre. Sowed April 20th, much injured. Winter wheat, in consequence of the worm, or weevel, was almost a total failure.

Spring wheat seems to require a high situation, perhaps a northern or western aspect on elevated lands will do best. It suffers severely if drought should intervene between the time when it begins to cover the ground, and the time of blossom. I think the 15th of May full early here, if you would escape the weevel; in colder climates, perhaps the insects deposit their eggs later.

*Barn-Buildings*—That barn suits me best which admits of most scaffolding; my scaffolds are of scantlings laid about six inches apart, and sufficient extension to dry fifteen loads of hay at once. I find it difficult to cure early cut hay on the field,* and not sadly injure it in color and quality, but cured it must be before it is mowed away.

We spread our hay on the scaffolds when but partially cured, and open the doors and windows; if laid lightly on the scaffolds it will soon dry, and then pitch it down, it will invariably come out fine except injured on the field. These remarks are not expected to apply to hay grown on old meadows, of light produce, for it is expected that among those who read the Cultivator and are determined to go ahead, such meadows will be scarce. A second qualification of a good barn, is stables contiguous to the thrashing floor, for horses and cattle, for if those be remote much inconvenience is experienced in feeding. Yard-buildings: Upright racks four or six feet from the backside of the sheds, add to the warmth of the shed if well filled with straw or coarse fodder, and I judge the thrifty husbandman would seldom have them empty. But the greatest modern improvement in the yard, is the straw house surrounded with rack-sticks instead of siding, with projecting roofs to shelter the cattle; around this the cattle can feed without fear of being pent up in a corner. I think we have not carried out one ton of hay on our yards in the old way in two years; our cattle make very little waste and I think feel no pinching want, the cows go to grass in good condition, but I cannot come up to our neighbor Jones, of Jefferson, who sells 200 weight of butter from each cow; I have only made a little over 2,000 lbs. of butter and 400 lbs. of cheese this season from twelve cows, but my pasture is chiefly clover, which perhaps is not so good. With much respect,

Yours, &c., WM. WALKER.

*Cobleskill, February 14th, 1838.*

*If our correspondent will adopt our mode of *curing his hay in cock*, in the field, instead of curing it upon the scaffold, we are confident he will save labor, and have equally as good hay as he has now. The advantages of his mode are, that the hay, by being cured by the air, and not by the sun, retains more of the leaves and nutrient properties, and has a better color, and more aroma, than it would possess if cured in the sun. The same benefits are secured, and with far less labor, we think, by putting it into grass cocks, and curing it there, as soon as the mown grass is wilted in the swarth and freed from all its external moisture.—*Con. Cult.*

### Utility of Agricultural Journals.

*Upper Middletown, Ct. Feb. 28, 1838.*

J. BUEL, Esq.—Dear Sir,—I take the liberty of addressing you a few words in relation to your paper, the Cultivator. It has been, I believe, but a few years since agricultural papers have been successfully established in this country; and I may say, that the amount of information which the farming community are capable of obtaining from them, is really invaluable. The improvement which, by the means of the knowledge farmers gain from these papers, they are capable of making, is worth at least ten times the cost of them; and they can, if they choose, extend it much beyond this. A paper like the Cultivator, at one dollar per annum, is low, and few can find an excuse for not taking it, as they can have it delivered to them at an annual cost of $1.19, to any part of the union. Men do not consider their *interests* when they neglect to take such valuable works, at so inconsiderable cost; if they do, I know of no better way of describing their policy, than by the old adage of "penny-wise and pound-foolish." It is no doubt a fact, that agriculture is capable of great improvement, perhaps beyond what can now be expected. This improvement is to be gained by practice and experiment. But, if every man would practice and experiment, and keep the result to himself, there would be but little gained. It is, then, by the diffusion of each one's experience and knowledge, who has made himself acquainted with any important facts among the whole community, that this result is to be gained. And in what better or cheaper way can this knowledge be diffused, than by cheap periodicals? Evidently none. Therefore I say, that every man who conducts such a paper, and every one who, by subscribing, contributes his aid to support it, is a public benefactor.

It is the duty, and indirectly, the interest of every farmer, to try and extend the circulation of such agricultural periodicals. For if his interests depend on the improvement of the soil, it is evident, that the extention of knowledge is to produce this result, therefore it is his interest. Let every farmer then, try and induce his neighbor, who does not take such a paper, to take one; and by so doing, he will not only benefit himself and his neighbor, but his country and mankind.

Our farmers need only to possess information to value it. If they once see the importance of agricultural periodicals, they will be at once convinced of the value of such information. I believe the time will soon come, when they will see the advantage of it, from the increasing prosperity and thriftiness of their neighbors who, endeavor "to improve the mind as well as the soil." C. P. WILLIAMS.

### On sowing grain early and feeding it off.

*Schenectady, 6 March, 1838.*

DEAR SIR,—I have considered it important to sow summer wheat, oats, barley and peas, as early as the season will admit in the spring, that they should come forward, shade and protect the ground from becoming too dry by early drought, which often happens in May and June, sufficient to starve and stunt the plants, and render the crop light. If this method should be departed from, I think it should be by feeding the grain by cattle before it spindles up in the spring, with a view to prevent its ripening till autumn.

I believe the reason why our oats and other grains are lighter than the same are in England is, because our seasons are warmer, and ripen the grain too fast.

If I were to engage again in farming, I would sow wheat the 1st August, and when it became too large, feed it down by cattle. It would then acquire large roots, and in the spring would urge forward much larger plants than that sowed in September, and I suppose must produce much a heavier crop. I think this experiment worth a trial: for, I believe it is a fact, that winter wheat and rye will live for years, if fed and not permitted to spindle and seed. As the fly which deposites the egg of the grain-worm flourishes about the ordinary time that wheat is in blow, I would feed it again in April and May, or 1st June, that it should not spindle nor be in blow till about 1st August. It would then escape the fly, and ripen in September, as it does in England. The weather being then colder, it would ripen slower, and the grain be heavier, as it is in England.

It would also escape the injury called *rust*, which is a disease caused in June and July, by means of very wet and very warm weather, which feeds the wheat plants too fast, whereby they become gorged, and the little vessels injured and burst, making sores on the straw, called rust; like as men when they eat and drink too much of good things, become diseased thereby.

I would thus experiment with wheat, oats, &c. to avoid the fly. If the fly can be thus cheated, it would be for our profit, although the worm appears to be a new creation, to chastise us for disobedience.

A field of wheat of the present spring might be fenced into several parcels, and try experiments of feeding till 1st June, leaving a patch, &c.

Most respectfully, D. TOMLINSON.

REMARKS.—Wheat and rye sown early in September, generally prosper better than that which is sown later, though the former is more exposed to the Hessian fly; and we have heard of instances of the good effects of sowing in August. It has been stated, with good reasons for its support, that the fly upon early sown wheat may be destroyed by feeding off the crop with sheep in autumn, who bite off that part of the grain in which the nit or maggot is deposited. The suggestion of feeding wheat in spring, to retard the development of the head till the fly of the grain-worm has disappeared, is certainly worthy of attention, and merits trial. It is an undoubted fact, that grain ripening in a cool season, or cool climate, is plumper and heavier than that which ripens in a hot season or hot climate. We have evidence, that Italian wheat sown late in May, did well the last summer.—*Cond. Cult.*

### The Wheat Insect.

Doct. De Kay, of the Zoological department of our Geologists, in his report of December 3d, 1836, says: "During the past summer, our farmers, more particularly in the northern parts of the state, had occasion to mourn over their blighted harvest, and witness the devastation of their property, occasioned by an apparently insignificant insect, and to regret their ignorance of its peculiar habits, in order that they might be prepared to suggest some rational remedy for his depredations."

When the labors of this learned entomologist shall have made some progress, and been reported, I know no mode by which their utility will be aided so effectually, extensively and generally, as through the columns of the Cultivator.

This new enemy, the wheat insect, known chiefly by his deeds, has escaped the notice of farmers; accustomed to find the root of the evil from the *larvæ*, or maggot state of most insects, as of the hessian fly, cut-worm, &c., hence this has been called the grain-worm, grey-worm, &c.

Having been absent at the south two summers, I had only the worms to examine,—these were confined with the grain, but of which they never ate. The last summer I sought early for the insect, and before the appearance of the wheat ear, a species of fly began to cluster about the field, and as their numbers increased I secured several of them for future examination, by placing them in colorless spirits. I was happy in bestowing them upon Mr. Mather and his associate geologists, although too late in the season to supply my loss.

The want of my specimens prevents giving the minute specific description to be drawn from the length and situation of the antennæ, &c., and the still more important organs of destruction, its *pointed proboscis*, the *perfect insect*, and not its larvæ, being the cause of the evil. I can only describe them from recollection. About half the size of the horse-fly, of a brassy green color; body and legs light, shoulders large, and wings long, adapted to long flight; altogether different from the Hessian fly, whose compact body and short wings curtail its locomotive powers. This *fly*, and not *its young*, destroys the wheat; it pierces the grain with its proboscis, and sucks out the juice while in a fluid state, and at the same time deposits five or six orange colored young within the glume or husk of the grain; a layer is in all cases interposed between them and the kernel; a spot under and around

these worms (which are deposited *viviparous* by the insect) is always observed discolored, as if the juice had oozed through the wounded grain, or had been deposited by the parent for their first nourishment.—These worms having acquired strength and *legs*, of which they were born destitute, emigrate to all parts of the plant and end their march at the root, where they remain until their transformation the next summer.

It may be worthy of remark, that after the hardening of the winter wheat, the flies remaining preyed in a similar manner upon the seeds of the quack grass, and deposit their young among its glumes. I am of opinion that nothing conclusive can be founded upon the experience of the last year's observation. Had not the harvest been delayed an unusual time, say two or three weeks, the winter wheat would have been too forward to be injured by the fly, in the same manner as the *late sown spring* wheat escaped their period of existence—that period being between the early and late blossoming of the wheat.

A speculative opinion founded on the above observations would imply, that should the winter wheat appear in great forwardness the ensuing spring, one might expect immunity from it? But if, from any cause, it should be rendered backward, the case will be hopeless, unless, by feeding it off, it should be delayed so as to blossom with the spring sowing. In my collection of the wheat-fly were two other species. They were not taken in their company. They differ in color, one having a conspicuous black spot near the extremity of the wing; the other having two or three colored bands across the wings. They are about the same size, and equally well armed for destruction; I know not on what they may be destined to prey; they too should be watched. C.

### The Least of the bugs.

In an old number of the Genesee Farmer is an article headed "The least of the Bugs." The writer, G., appeals to the observation of his neighbors; alas, this, or his own future investigation, is his only resource for information, a system of entomology of our country remains a desideratum. I believe he is right in considering them clover bugs. Some strollers of this race occasionally deposit their eggs or larvæ on the newly formed ears of rye; the larvæ reaching the grain while yet in a fluid state, disturbs its juice, and prevents its regular organization; this grain not being circumscribed by a hard shell, like clover seed, shoots out into a spur called ergot.

I examined a sample of ergot, procured at or before harvest time, and found in every grain the track of an insect. Following its course I discovered either the larvæ or pupa, the last soon developed the perfect insect, which was a black, glossy and nearly hemispherical bug. Believing this insect was the cause of ergot I enclosed the larvæ, pupa and bugs in object glasses for microscopic observation, and sent them to the Lyceum of Natural History in New-York.

Unfortunately for my theory, the opinion of De Candolle had just been published, "that ergot was not a distempered grain, but a peculiar fungus."—The society, rather than decide against the opinion of the greatest botanist in Europe, I suppose, were forced into the belief that these insects were created to feed upon this peculiar fungus; strange profusion in nature indeed, that a solitary one should have been supplied with food sufficient for a battalion of them.

My specimens however were put in the museum of the society, and my memoir placed among its archives for the month of August, 1818, where G. may find them without further direction, and probably identify them as his "*least of the Bugs.*" My opportunities for examining clover seed have been very limited; sufficient however to see many grains perforated in the same manner as peas from which the bug had escaped. Should any one repeat my experiment, I would recommend the examination of the ergot to be made about harvest time; if too early, from the minuteness of the worm it may elude his vision, and if too late, its traces may be obliterated by the process of drying. I have not found it in the ergot of the shops. My opinion that this, which I consider as the clover bug, is the cause of ergot, has received further corroboration by observing, that a few solitary plants of rye, growing in a lot with some red clover, were loaded with ergot;—again, last summer, in a field of rye, a square rod, adjoining a pasture lot containing clover, produced more spurs than an acre at a distance in the same field. As a proof that insects do not confine their operations to one favorite plant, I have seen ergot on elymus, rye-grass; and the wheat-fly frequently deposits its young amongst the seeds of quack-grass.

From the above it results, that we are called to view this almost microscopic insect with some interest. Let us observe it a short time before sun-set—see, it raises a helmet which has concealed its head, poises its elytra or wing-covers, expands its white wings from their plated and folded position, beneath the wing-covers—its visible dimensions are increased full six-fold; it next takes an aerial excursion to join in a waltz-like circle with countless numbers of its species. But while we contemplate with wonder the perfection of its organization, our pride is humbled to think that nothing is wanted but increased numbers of these insects to destroy entirely, what they now do partially, the staple article, *clover-seed.*

I would further remark, that the aberration of this bug into the rye-field, according to medical opinion, furnishes a potent remedy called ergot, and by the same authority this ergot, when mixed largely in bread, occasions gangrene and death. This has been sufficiently published for the last half century to induce farmers to be careful to separate the ergot from grain before grinding. To recapitulate, *the least of the bugs* is not beneath the attention of the farmer, the physician, the naturalist, and of every one who can say with the Psalmist, "The works of the Lord are wonderful, sought out of all them that have pleasure therein."

*Kinderhook, January 7th*, 1838. C.

### Otsego Leicester Sheep.

Mr. BUEL,—Sir,—I most cheerfully comply with your request to furnish for the "Cultivator," some account of the large fat wethers I sold Mr. Kirkpatrick, which were exhibited by him, in the Centre Market, on the 22d of February last.

It has been the practice of our butchers, for several years past, to procure and exhibit, on the birth day of the illustrious Washington, the *best* beef, mutton, veal, and pork that could be procured; and in no instance, in my recollection, has the exhibition equalled the last. And it is no less wonderful than true, that the meats, now furnished in our markets, are, at least, one hundred per cent *better in quality and greater in quantity*, than they were ten years ago.

What stronger argument than this do we want, in favor of an improved state of farming and improvement in our stock?

Albany has long been famous for superior fat mutton. It is now about thirty years since the late Christopher Dunn, Esq. first introduced the famous New Leicester or Bakewell sheep into this region.—Wilkinson and others followed in his track.

About the same period, or a few years earlier, some of the large Teeswater cattle were first introduced in this vicinity by Messrs. Cox and Colden, of Rensselaer county. In 1821, M. Bullock, Esq. of this county, imported two Durham bulls; and in 1823, S. Van Rensselaer, Esq., imported, at great expense, one bull and two heifers of the "improved Durham short horned" cattle.

I give these spirited gentlemen the credit of laying the *foundation* for the improvement of our beef and mutton.

But the improvement of our animals, has been more manifest for the last eight or ten years. The miserable *rickety runts* which formerly disgraced our barn-yards, are giving place to the more square and stately Durham, or smooth, beautiful Devon—to the large lusty Leicester, or the broad, round bodied South Down.

In December last I made a visit to a friend, residing in Butternuts, Otsego county, who was kind enough to introduce me to some of the farmers in his vicinity.

It is about three years since I had visited that section, and I assure you, I was not only highly gratified, but very much surprised at the great improvement in their various stock of *grade* animals. The great improvement in *that part* of the country, I attribute to an Agricultural Society which has been established there some two or three years.

They had met a few evenings previous to my arrival, and when we met them in the course of our tour, I was much pleased to hear the observations made in the course of conversation to my friend—expressing the gratification and satisfaction they experienced at the last meeting of the society. And in a letter now before me, he says:—"Last night I gave my first agricultural *soiree*, which was well attended, and I think, gave general satisfaction to all present. I think I never saw a more genuine interest and enjoyment in social intercourse than I witnessed last night. There was a constant interchange of opinions. My friends grouped together in knots of three and four, each engaged in discussing some subject of particular interest to them in their own business.—They were *all practical* farmers, who till the soil with their own hands."

To return to my *sheepish* story. In the course of our perambulations we visited the farms of Messrs. Adcook and Musson, which are situated on the hills, about two miles east of Gilbertsville, Butternuts, Otsego county.

In the yard of Mr. Daniel Adcook, I found the five fat wethers I sold to Mr. Kirkpatrick. Mr. A. had procured scales for the purpose of ascertaining their weights. I was present when they were weighed, and they averaged 203 lbs. One of them reached 230 lbs. Being satisfied they would make *larger* sheep then had ever been seen in our market, I purchased them on the spot.

They were slaughtered and exhibited in the centre market, on the 22d of February last, and their weight was as follows:

| | | | | |
|---|---|---|---|---|
| No. 1. | Two year old weather, | ..... | | 151 lbs. |
| 2. | do | dc | do | ..... 141 |
| 3. | Three | do | do | ..... 141 |
| 4. | do | do | do | ..... 161 |
| 5. | do | do | do | ..... 167 |

making an average of 152¼ lbs., or 38 lbs. per quarter. The largest saddle, I have been informed, was purchased and sent as a present to the Hon. Henry Clay.

Mr. Adcook, the breeder and feeder of these superior sheep, is an Englishman by birth, and numbers four score years—settled on the farm he now occupies, some thirty or forty years ago, when a wilderness. The mighty forest bowed to the stroke of his axe, and by dint of industry, economy and perseverance, he has secured a competency sufficient to satisfy any reasonable person.

Great credit is certainly due to Mr. Adcook for his long continued exertions and attention to the perfecting of his flock, both by selections and importations from England, of which the five wethers were a specimen. His flock now consists of about eighty head of choice animals, some of which, I presume, he would sell to breeders at fair prices.

His nephew, Mr. Musson, whose farm adjoins, has also a flock of very good sheep of the same breed.—I also found in the yards of these gentlemen some superior cattle, a cross of the Bakewell or Shakespeare breed with the Durham, and some beautiful calves from these cows by an high-bred "improved Durham short horned" bull, now the property of H. D. Grove Esq. of Hoosick, Rensselaer county.

From Mr. Adcook's we passed through the valley of the Butternut creek on to the West hills, about two miles, to the farm of Mr. Jackson, where we were shown some very good *grade* cattle and about sixty head of very good sheep. Mr. Jackson's sheep are more varied in character, (if I may be allowed the expression) than those of Mr. Adcook and Musson. Some partake of the Leicester, some of the Lincoln, some of the Cotswold. This, I presume, is in consequence of his having selected from various flocks.—Among them were some he had obtained of J. Wilkinson of Duanesburg, which could readily be selected by a person that was acquainted with his flock.

There was one thing about these gentlemen's premises, I cannot in justice to them, let pass without notice,—and that is the excellent arrangement of their buildings and sheds for the accommodation and protection of their cattle and sheep; (a consideration, I regret to say, too little regarded by most of our American farmers.) "Comfort and convenience" seems to be their motto.

Cattle and sheep do not claim all their attention, for I found my favorite Berkshire pigs in most of their pens. Ten and fifteen dollars is not an uncommon price there for pigs from eight to ten weeks old.

In the possession of Mr. Thomas Hollis, of Gilbertsville, I found two very superior sows. Mr. Hollis has also some excellent *grade* sheep, a cross from a South Down buck, which he obtained of F. Rotch, Esq. of Louisville, who first introduced this valuable variety into that vicinity.

I have in a former communication spoken of Mr. Rotch's stock of Durham cattle and South Down sheep, and will now merely say, there has been great improvement in this stock since I saw them—evincing, in an eminent degree, what science, good judgment and attention may accomplish, when properly applied. CALEB N. BEMENT.

*Three Hills' Farm, Albany, March 10th*, 1838.

### Top-Dressing Meadows.

*Hamptonburgh, March 6th*, 1838.

J. BUEL, Esq.—Dear Sir,—I was so much pleased with the results of some experiments made last season and the season previous, in the top-dressing of grass or rather meadow grounds, that with your permission I will communicate them to the agricultural public. The information will not be new to many of your readers, and although others may remain sceptical, yet to all I would say try it, should it only be on one square rood. Soon after haying in the fall of '36 I had collected what manure could be scraped up (it having all been applied the preceding spring to our corn and potatoe crops) and carted on to the poorest part of one of our meadows, and spread at the rate of, say twenty loads, to the acre, and adjoining this, in the same meadow and the same kind of soil, which is a rather thin clay, I had spread thinly all the straw we could find in a perfectly dry state, and for this piece of folly was laughed at by some of my knowing neighbors, but while mowing this part of the

meadow I invited some of them to witness the result, at which I was myself astonished; we could discover no difference where the manure was applied, and where the straw had been, but in both cases the quantity of grass was nearly double to that on either side where no manure or straw had been used. This experiment, pardon the frequent use of so ominous a word, was so successful, that I repeated it the past season, spreading all the straw we could muster immediately after haying, and in a few weeks the difference in the growth of the grass where the straw had been spread and that of the adjoining part of the meadow was so manifest that no one could doubt the utility of the practice—in the one case the grass started quick and grew rank and thick, and in the other, the growth at the end of two or three weeks was hardly perceptible, and I am told by a Long Island friend, that the crop will be more enhanced at the second mowing after the application than the first.—What is the rationale of the thing, I pretend not to know; I merely state the facts of the case. And yet, Mr. Editor, how common is it to see great heaps of straw about the barn or in the fields, left there to rot and become a nuisance, instead of adding, if properly applied, from 50 to 100 per cent to the crop.—And this species of manure is so much more easily, and cheaply applied; two loads being sufficient for an acre, whereas from twenty to twenty-five of barn-yard manure would be required.

Another experiment, (pity some "experiments" of a more important character should not have resulted more favorably) I made last spring with ashes and plaster, has satisfied me of the great value of the former as a top-dressing for our meadows. I plastered a part of a ridge in a meadow, where the season before we had cut a middling crop of clover and timothy, and on the balance of the ridge I sowed ashes at the rate of twenty-five or thirty bushels to the acre. The crop on the whole ridge was improved, but the part that was ashed, turned off a swarth full one-third heavier than the other. The spot on which this last experiment was made, might perhaps have been ploughed to advantage, but there are numberless acres of what we call natural meadow, that cannot be ploughed without extensive ditching and underdraining, and while I fully coincide with you, Mr. Editor, in your views of the utility and great importance of this branch of agricultural improvement, it must be borne in mind, that comparatively few can afford, except by degrees, the expense which it would involve. All the surplus population of the Emerald Isle, in a quarter of a century or more, and at an expenditure of many millions, would hardly accomplish what would really be beneficial in our country. We must therefore adopt the best expedients within our reach, to add to the fertility and profits of our farms.

Permit me to say that the Dutton corn did not disappoint my best anticipations. Owing to the wet and backward spring last spring, we did not plant it until the last of May or first of June. The Dutton corn ripened to my satisfaction, while nearly one half the common eight rowed kind was soft—so that I am satisfied, that had we planted all of the former it would have been an advantage of more than twenty-five dollars. With much respect,

Yours, W. W. J.

### Efficacy of Gypsum sown in Autumn.

*Seneca-Falls, March 13th*, 1838.

JESSE BUEL,—Dear Sir,—I address you now simply to give you the result of an experiment which I made last year with gypsum. In October 1836, I sowed about six bushels per acre upon part of a field sowed to wheat early in September. The land was a mixture of sand, gravel and loam. It had laid several years in timothy. In the spring it was ploughed, and oats, corn and peas put in. Part of the field I applied no plaster to. The difference between that sowed with plaster and that on which no plaster was sowed, was quite one-half in favor of the former.—That which was plastered produced a vigorous growth of straw, while the heads of wheat were much longer and fuller than that which was not plastered. By sowing in the fall, the gypsum becomes, from the action of the fall and winter rains and snow, perfectly dissolved, forms a chemical union with the soil, and affords to the wheat plant its natural food. When sowed in quantities from five to six bushels per acre, the benefit is felt on the subsequent crop of grass.

From experience I am satisfied that gypsum ought to be applied on timothy and other grass meadows, in much greater quantities than are usually put on clover. Gypsum when sowed in large quantities on a clay soil, ameliorates it. Upon a few yards of stiff red clay I spread about half a bushel of plaster last spring; in the course of the summer the color of the soil changed to a dark brown, and the clay pulverized, lost its tenacity and became, when dry, almost as light as ashes. I agree with you in your opinion as to the manner in which plaster benefits different crops.—Of some plants, such as corn and clover, it constitutes the specific food. But others, such as timothy, wheat oats and barley, it benefits by its chemical action on the soil as well as by furnishing lime to those which require it. The wheat crop, as far as I have observed since the snow has left us, looks well.

Your obedient servant,

SAML. J. BAYARD.

REMARKS.

The suggestions in the preceding communication of Mr. Bayard are very important to the farmer. They go to render probable, what before was doubted, that gypsum may be advantageously applied to clays, if applied in larger quantities than usual; that it has a chemical action upon the soil, and is thus in directly and highly beneficial to crops upon which it is believed not to have any direct action. The improvements it suggest are, 1. To sow gypsum in the autumn, or early in the spring; and, 2, to sow it in larger quantities than usual upon clays. We sowed plaster upon our meadows in April, and upon two or three ridges the quantity was doubled, i. e., at the rate of two bushels the acre. The crop upon these ridges was nearly double what it was upon the rest of the field. Soil, clay loam. —*Cond. Cult.*

### Smut in wheat.

J. BUEL, Esq.—Dear Sir,—It seems that our wheat crop, as bread-stuff, in this country, is considered the most important; it is well known there are many evils befalling this grain, especially of late years.—Many inquiries has been made for warding off those evils. The smutting of this grain may be considered one of the greatest evils, although a remedy is found to allay the matter in some degree; yet the cultivator is not exempt from much trouble and anxiety, that is from the mode of liming, brining, &c. It is ascertained in my neighborhood, that the sowing of old wheat is a complete preventive; a neighbor having spared all his new wheat sowed of his old, observing the product to be perfectly clean from smut, when his neighbors and his former crop was more or less smutty; when this was fully discovered, they flocked to him for clean seed; inquiry was excited, and the circumstance of sowing the old grain was brought in question, and considered to be the only cause.

As we are small wheat growers in this section, but little has been said respecting the discovery. I have laid it up for a valuable truth. Mr. Editor, if you know nothing relative to this statement, I think you will cause it to be published in your paper, soliciting information; if correct, it must be a valuable acquisition to the public when generally known.

If the true cause of smut in wheat be an insect, the period of one year destroys them. If it be seed, the germinating powers must have perished. If buggy peas are kept over one season, there will be no live bugs found among them.

A small portion of fine salt sifted and raked into a bin of corn, or any grain whatever, immediately kills the insects or drives them off; can any quantity of salt sufficient to drive them away from the field be applied and not destroy the grain, at the proper season of their mischief! Respectfully,

ABEDNEGO ROBINSON.

*Portsmouth, (N. H.) March* 1, 1838.

REMARKS.

The modern opinion is, that smut is a parasitic plant, i. e. a plant which feeds and lives on the wheat plant, and Bauer, in the transactions of the Royal Society, says its seeds are so minute as to pass from the seed grain in the soil, with the ascending sap, to the ear of the grain, where it grows and produces smutty grain. Many of the salts, as marine salt, lime, vitriol, coppers, &c., are found to destroy the germinating principle of this seed, and the supposition is a rational one, that the smut seed loses its vital principle by being kept through one season, which we know to be the case with many seeds. And upon this hypothesis we account for the fact stated by Mr. Robinson. But even if old wheat is put into a bag which has contained smutty wheat, or is in other way brought in contact with smut seed, the infection will take, and the crop will be more or less affected.—*Cond. Cult.*

### How to produce new varieties of Corn.

I selected last June from my early garden corn, sachatash kernels, sufficient to plant about thirty hills, continuing the rows a few hills with the original product of the cob. This corn was a bright yellow, and of tolerable size; the kernels picked out of the rows of the ear were also yellow, but not as bright a tinge as the original, but very well matured; those kernels must have originated from white sachatash, as I have never seen any other color of the sachatash, other than dark purple, which is used for coloring frequently; this corn was all planted at the same time, and the attention precisely the same. Its appearance was so uniform, no one acquainted with its growth would pretend to draw a line of distinction; it kept equal pace to maturing. The result of my experiment has far more than remunerated for the set out, and has successfully exceeded my expectations. In harvesting I found one uniform original appearance of the early garden, the sachatash differing only in softness. A few ears were boiled when in a proper state and found to be good sachatash. I have now a handsome little trace of this corn, no more mixed than common, where other varieties are planted neighbors to it; some ears being perfectly clear.

This statement infers, that different varieties of corn as to size, color, and period of maturing, may be chosen as fancy may lead, and planted aside or in the midst of sweet sachatash, which will receive a portion of sachatash in the ear, the product of which planted by itself, will be of the original in all the particulars, except it being soft, sweet sachatash. Mr. Editor, it will be my greatest pleasure to send you one ear of this experimented handsome corn, if any opportunity by sending it by water should occur, and hope it would be accepted. If any rare seed should be in your hands, intended for distribution at the time this may be received, I should think myself highly flattered in receiving a few seed, especially of such as promise a profit. A. ROBINSON.

*Portsmouth. (N. H.) March 2d*, 1838.

REMARKS.

The idea of improving our corn, by artificial crossing, is novel, yet perfectly philosophical; and we doubt not but in this way improved varieties may be obtained, or at least varieties combining the prolific qualities of one kind, with the early maturity of another. Although when corn is found mixed on the same ear, as white and yellow, the grain appears to resemble exclusively one or the other parent, that resembling the male must partake more or less of the peculiar properties of the female parent, and must of course constitute a new variety. Mr. Knight experimented with the pea, with wheat, and the strawberry, and produced by the artificial cross several esteemed varieties, several of which in consequence bear his name.—*Cond. Cult.*

### Steeping and Tarring Seed Corn—Italian Wheat—Farm Accounts.

*Sennett, March* 8, 1838.

Judge BUEL,—Dear Sir,—We planted about 12 acres of corn, most of it 8 rowed, some the large 12 rowed variety, common with us, and about 1 acre of the Dutton. All of it was soaked, tarred and plastered with great care, and planted the 12th to 15th of May. It came up remarkably even and thrifty, maintaining its superiority over all other fields in its vicinity, and has produced about 70 bushels per acre of excellent sound corn. The tarring and plastering, although not a perfect cure for the crows and wire worm, we are fully convinced is better than all other means hitherto employed, and for promoting the growth and ripening of the corn, so valuable, that accidental causes alone, will prevent me from using them hereafter. Their successful application requires much care, both in the preparing and planting, but when well done, will add one-fifth to the product, besides lessening the liability to be destroyed.

I sowed 6¼ bushels of Italian spring wheat from Rome, on 5 acres of corn stubble in the best condition, the 15th April, and from it have received 202 bushels of excellent wheat, which I have sold for seed at 2 dollars per bushel. This all fell down, 3 weeks before it was cut, yet it did not rust in any degree, while winter wheat in the same field, was completely spoiled by it.

We sowed 2 acres of roots, ruta baga, carrots, and mangold wurtzel, and gathered about 600 bushels pr. acre from the turnips, but not as many from the carrots, and still less of the beets. We consider the turnip the most valuable for common culture, considering the relative labor, in raising and their value when raised, although the carrot is probably the most nutritious of the three.

The plan of keeping an account of the produce of different crops, and our operations, we have pursued the past year for the first time, and find it very useful; and on the whole have learned much, and we think laid the foundation for learning much more.

Yours very respectfully,

LEVI J. HOPKINS.

### The Contrast.

The astonishing power of hereditary opinions, and of impressions received in early education, is attempted to be illustrated, by the following dialogue, supposed to have occurred in an evening conversation, between a farmer of the hereditary school, and his son, on the latter's return from school, where he had studied, with some interest, the principles of scientific farming.

LANSINGBURGH.

*Father*—Well, John, since you are becoming a scholar, I suppose you have quite outgrown the thoughts of being a farmer!

*Son*—No, father, the effect is quite the contrary. I have been paying considerable attention to the study of agriculture; and I assure you I have found it a most delightful subject.

*Father*—From the number of books and foolish newspapers, all about farming, you have brought home,

you are in a fair way to run crazy and turn book farmer—why son I would sooner see you engaged in catching grasshoppers.

*Son*—Then, I suppose father, you consider farming as not susceptible of any improvements.

*Father*—Improvements, why what improvements do you want, John? Have not I been a farmer all the days of my life—and a good farmer! and were not my father and grandfather good farmers, brought up to it! and now I have been sending you to school, and on your return home, have commenced teaching me how to farm. No—no—John, that wont do—I am too old to begin to learn my trade anew from books, written by a parcel of lazy fellows, who never hoed a hill of corn in their lives.

*Son*—Then, I suppose you will plant corn on the same old field behind the barn where you have always planted it, and feed the same breed of long snouted, razor backed hogs.

*Father*—Yes, John, I have hoed corn in that old field many a day, by the side of your grandfather; and it is good enough for me, yet; and the pork of my old breed of hogs brought me over a hundred dollars last winter, and I have no doubt, they will bring me as much this winter coming; and if you intend to be a farmer, and are wise, you will follow my example, and not be led into the wild goose chase of book farming.

*Son*—Well, father, I am not disposed to question your claim to the title of a good farmer; and I am proud of being descended from ancestors of that most ancient and most honorable calling; but should I arrive at the honor of pursuing it on my own account, I shall feel additional pride in meriting the appellation of a book farmer. If I can succeed in raising sixty bushels of corn from an acre with the same, or less labor than it cost you to raise thirty; and if I can obtain a breed of hogs which are not more than half legs, ears and snout; and which will not, like Pharoah's lean kine, cost more than their value, I shall not consider that I disgrace my worthy ancestors by so doing.

*Father*—Ah, John, when you are of age you will of course act for yourself, and I hope, by that time, you will have more sense than to believe your sixty bushel stories, and hogs fatted upon moonshine. I have as good corn on the old family corn lot as any of my neighbors, and I think thirty bushels a pretty good crop. For my part, I dont think best to believe half the lies people tell.

*Son*—I have no wish, father, to believe lies; but I think I could give you most satisfactory proof that more than a hundred bushels of corn have been raised from an acre, in a great number of instances—

*Father*—Why John—I would not believe so foolish a story, if I told it myself. But I see I have sent you to school to make a fool of you. I hope, however, you will out grow it when you get more discretion.

*Son*—I hope, Sir, I shall improve in discretion, but I am very sure discretion will never influence me against being a book farmer.

*Father*—A book farmer!—why my son, I am tired of such folly—have not I always been considered a good respectable farmer? Are not my crops always planted in season and tended and gathered in good order? What better can you do in farming, than to follow my example.

*Son*—Your example, father, as far as industry and attention to business go, are perfectly satisfactory, and I shall be proud to follow it. But you will excuse me when I tell you that book farming teaches me some improvements in the system of managing which I think are too important to be neglected. It teaches me that plants require food as well as animals; and that the ground which supplies that requires to be replenished from time to time with the means—it teaches me that if the manure which has been accumulating by the side of your barn ever since my remembrance, and is now rotting the covering, were spread upon your corn field, it would, at least, double your crop; that by changing crops the value of your land would be doubled. I have learned, by books, as well as by my own observation, that as great improvements may be made in the breeds of animals as in the choice and cultivation of vegetables, especially in the breed of hogs.

*Father*—Why, in the name of common sense, what improvement would you have in the breed of hogs?—My hogs last fall weighed from three to four hundred—do you want any thing better than that?

*Son*—Why, sir, the corn which fatted each of your hogs, to that weight, would have been abundantly sufficient for three of the Berkshire breed, of the same weights, and that which feeds your store hogs, with bodies as lank as grey hounds, and having as if you were breeding them for racing and leaping fences, would keep double the number of any of the improved breeds, with short legs and ears, so fat that their bellies would drag upon the ground.

By the way, father, let me show you a sketch I made at Hoosic falls, the other day—a fat hog, of the Berkshire breed, was turning to get at an ear of corn which lay between it and the fence, when a real racer, of your favorite breed, which was six or seven yards off, seeing the corn, and urged no doubt by his ever craving appetite, making what a Scotchman would call a *hop, step and leap*, jumped clean over him, and got the corn. [Fig. No. 33.]

*Moneys received during the last month. Sums under five dollars not noticed.*

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| Black Rock, Erie, | 14 | Fredericksburgh, | Va. 22 |
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| Brownsville, | Pa. 15 | Holland Patent, On., | 9 |
| Bybury, | " 12 | Hoosick Falls, Renns., | 5 |
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| Brooklyn, | " 14 | Harrisburgh, | Pa. 11 |
| Bridgeville, | Del. 6 | Haverhill, | Mass. 11 |
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| Cooperstown, Ots. | 16 | Huntsville, | Va. 12 |
| Cuddebackville, Ora., | 5 | Harris, | Va. 14 |
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| Coventry, Chen. | 15 | Ithica, Tomp. | 6 |
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| Clarendon, | Vt 11 | Lisbon, | " 20 |
| Castleton, | " 17 | Lebanon, | Tenn. 6 |
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| Durham, Greene, | 5 | Minaville, Mont. | 20 |
| Delhi, Del., | 16 | Milford, | Del. 11 |
| Dixon's Ferry, | Ill. 11 | Milton, | " 10 |
| Denton, | Md. 13 | Mansfield, | Ct. 5 |
| Dawsonville, | " 17 | Monroe, | " 12 |
| Darnestown, | " 12 | Marlboro, | " 6 |
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| Ellsworth, | O. 12 | Marksboro, | N. J. 11 |
| Eugene, | Io. 7 | Montpelier, | Vt. 8 |
| Everetsville, | " 6 | Newark, | R. I. 22 |
| Emmetsburgh, | Md. 14 | New-York city, | 78 |
| Easton, | " 5 | Newburgh, Or. | 11 |
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| New Lebanon, Col. | 12 | St. Inigoes, | " 11 |
| Nassau, Renss. | 6 | Staunton, | " 18 |
| New Bedford, | Mass. 42 | Salisbury, | Md. 11 |
| Northampton, | " 24 | St. Michaels, | " 11 |
| New Marlboro, | " 12 | Snowhill, | " 11 |
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| New Berlin, | " 5 | Sheffield, | " 16 |
| New Holland, | " 17 | Southbridge, | " 15 |
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| New Milford, | " 11 | St. Albans, | " 37 |
| New Preston, | " 9 | Shoreham, | " 7 |
| Norwalk, | " 13 | Smyrna, | Del. 17 |
| New Alstead, | N. H. 5 | Scull Shoals, | Ga. 5 |
| New Brunswick, | N. J. 23 | Summersville, | N. J. 12 |
| Newton, | " 11 | Suckasunny, | " 5 |
| New Germantown, | " 6 | Salem, | " 5 |
| Norfolk, | Va. 25 | Shrewsbury, | " 12 |
| Newbern, | N. C. 18 | Salem, | Ia. 17 |
| Nashville, | Tenn. 22 | Shannon's Store, | Ill. 11 |
| North Searsmont, | Me. 11 | Troy, Renns., | 17 |
| Orangeville, Gen., | 11 | Trumansburgh, Tomp., | 11 |
| Oswego, Osw., | 17 | Troupsville, Cay., | 5 |
| Ovid, Sen., | 11 | Thompsonville, | Va. 16 |
| Owego, Tioga., | 24 | Thompson's X Roads | " 7 |
| Oxford, Chen., | 27 | Titusville, | N. J. 7 |
| Oak Forrest, | N. C. 11 | Torringford, | Ct. 11 |
| *Orange C. H., | Va. 17 | Trappe, | Md. 5 |
| Poughkeepsie, Dutch. | 28 | Utica, Oneida, | 22 |
| Perry Centre, Gen., | 8 | Uniontown, | O. 11 |
| Plattsburgh, Clin., | 11 | Upper Middletown, | Ct. 10 |
| Pawlings, Dutch., | 6 | Vienna, Oneida, | 7 |
| Portland, Chaut. | 6 | Vienna, | Md. 16 |
| Plymouth, | Ill. 7 | Vergennes, | Vt. 7 |
| Plymouth, | Ct. 6 | Washington Hollow, Dut. | 11 |
| Pittsburgh, | Pa. 13 | Westfield, Chaut. | 5 |
| Pottsville, | " 8 | Warwick, Or. | 11 |
| *Philadelphia, | " 75 | Warsaw, Gen., | 6 |
| Petit Nation, | L. C. 5 | Warren, Herk., | 9 |
| Pittsfield, | Mass. 11 | Westmoreland, Ont., | 11 |
| Princess Ann, | Md. 39 | Williamson, Wayne, | 7 |
| Painsville, | O. 14 | West Winfield, Herk., | 11 |
| Point Pleasant, | " 7 | Waterloo, Sen. | 9 |
| Pasumpsic, | Vt. 12 | Watertown, | Mass. 91 |
| Port Royal, | Va. 6 | Warwick, | " 7 |
| Powell's Tavern, | " 11 | Westboro, | " 16 |
| Redhook, Dutch., | 13 | West Springfield, | " 13 |
| *Rhinebeck. Dutch., | 27 | Wilton, | Ct 11 |
| Richmond, Richmond, | 22 | Winchester, | " 15 |
| Rome, Oneida, | 15 | West Hartford, | " 17 |
| Richmond, | Va. 36 | Waterbury, | " 6 |
| Rutland, | Vt. 28 | Wallingford, | " 5 |
| Royalton, | " 12 | Windham, | " 13 |
| Rutland, | O. 6 | Westminister West, | Vt. 8 |
| Rahway, | N. J. 13 | Wallingsford, | " 7 |
| Rockaway, | " 19 | Waterbury | " 22 |
| Rockhall, | Md. 11 | West Milton, | " 16 |
| South Westerlo, Alb., | 11 | West Rutland, | " 14 |
| South Trenton, Oneida, | 19 | Woodstock, | " 15 |
| Salem, Wash., | 9 | Wellsboro, | Pa. 16 |
| Sing Sing, Westc., | 11 | Walkersville, | Md. 14 |
| Stockbridge, Mad., | 11 | Winchester, | Tenn. 11 |
| Stokes, Oneida, | 6 | Walpole, | N. H. 11 |
| Skaneatelas, Onon., | 8 | Westmoreland, | " 11 |
| Sherburne, Chen., | 5 | Walton, | Del. 11 |
| Smithville, Jeff., | 6 | Westport, | Ky. 6 |
| Stony Point Mills, | Va. 16 | Wilmington, | Va. 33 |
| Surrey C. H. | " 16 | Warren, | " 11 |
| Subblett's Tavern, | " 13 | Washington, | D.C. 13 |
| Suffolk, | " 11 | Whitesville, | Ala. 5 |

* Including former payments.

## PRICE CURRENT.

| ARTICLES. | | New-York. March 21. | Boston. March 21. | Philadelphia March 20. | Baltimore. March 20. |
|---|---|---|---|---|---|
| Beans, white, | per bush. | 3 00..12 00 | 1 12.. 1 30 | 1 00.. 1 12½ | 1 25.. |
| Beef, | cwt. | 5 75.. 7 | ..... | ..... | 7 00.. 8 50 |
| Bacon, western, | lb.... | 10½.. 11 | ..... | 8 00.. 9 | 11.. |
| Butter, fresh, | lb.... | 18.. 20 | 22.. .... | 12.. 15 | 20.. 25 |
| Cheese, | lb.... | 7½.. 9 | 8.. 9 | 9.. 10 | |
| Cotton, best, | lb.... | | ..... | ..... | 10.. 12 |
| Flour, best, | bbl.. | 8 00.. 8 75 | 8 37.. 8 50 | 7 50.. 8 00 | 9 50..10 50 |
| Grass—Red Clover, | bush. | 1 50.. 1 56 | ..... | 1 62½.. 1 62½ | 1 65.. 1 70 |
| Wheat, | bush. | 1 50.. 1 60 | 1 50.. 1 55 | 1 95.. 2 00 | 1 95.. 2 00 |
| Rye, | bush. | 70.. 75 | 74.. 75 | 85.. 90 | 85.. 90 |
| Oats, | bush. | 37.. 40 | 50.. 53 | 35.. 36 | 37.. 38 |
| Corn, | bush. | 70.. 75 | 74.. 75 | 65.. 68 | 70.. 76 |
| Hams, | lb.... | 9 00.. 2 50 | 12.. 13 | 10.. 12 | 13 00.. 7 |
| Pork, prime, | cwt.. | 3 00..11 00 | ..10 | ..... | 6 75.. 7 |
| Pork, in hog, | bush. | 12.. 13 | 13.. 14 | 10.. 11 | 10.. 11 |
| Sheep—Timothy, | bush. | 2 75.. 3 00 | 2 75.. 3 00 | 2 ..3 | 3 00.. 3 50 |
| Wool—Saxony, fleece, | lb.... | 45.. 50 | 50.. 55 | 48.. 50 | 40.. 50 |
| Merino, | lb.... | 45.. 50 | 45.. 47 | 46.. 50 | 30.. 35 |
| 1-4 and com. | lb.... | 37.. 38 | 33.. 38 | 55.. 37 | 25.. 30 |
| Sheep, | head. | | 2 75.. 6 00 | | |
| Cows and Calves, | | | ..... | ..... | 15 00..45 00 |

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